mental health digest
National Clearinghouse for Mental Health Information, Vol. 3, No. 7, July 1971

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NATIONAL MENTAL HEALTH ACT

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CHALLENGES: PAST AND FUTURE

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cover story

Silver Anniversary

The National Mental Health Act, signed into law by President Harry S. Truman on July 3, 1946, authorized the formation of the National Institute of Mental Health and set in motion an entire series of programs "for the improvement of the mental health of the people of the United States."

mental health digest

The *Mental Health Digest* is a monthly publication designed to reflect the whole spectrum of mental health and to present a broad sampling of scientific subject matter and professional points of view. It contains condensations of material selected from the current mental health literature. The condensations are published with the approval of the authors and publishers for use in the *Mental Health Digest* only.

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Seventy-ninth Congress of the United States of America

At the Second Session

Begun and held at the City of Washington on Monday, the fourteenth day of January, one thousand nine hundred and forty-six

AN ACT

To amend the Public Health Service Act to provide for research relating to psychiatric disorders and to aid in the development of more effective methods of prevention, diagnosis, and treament of such disorders, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Mental Health Act".

PURPOSE

SEC. 2. The purpose of this Act is the improvement of the mental health of the people of the United States through the conducting of researches, investigations, experiments, and demonstrations relating to the cause, diagnosis, and treatment of psychiatric disorders; assisting and fostering such research activities by public and private agencies, and promoting the coordination of all such researches and activities and the useful application of their results; training personnel in matters relating to mental health; and developing, and assisting States in the use of, the most effective methods of prevention, diagnosis, and treatment of psychiatric disorders.

Speaker of the House of Representatives.

President of the Senate pro tempore.

Approved July 3, 1946

Harry Truman

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Twenty-Fifth Anniversary of the National Mental Health Act

On July 3, 1946 President Harry S. Truman signed the National Mental Health Act. On June 28 and 29, 1971 a conference was held in Washington, D.C. to commemorate the signing and to look back at the happenings in mental health during the past 25 years.

The Conference was sponsored by 17 organizations: American Medical Association, American Nurses' Association, Inc., American Orthopsychiatric Association, American Psychiatric Association, American Psychological Association, American Public Health Association, Association of Medical Superintendents of Mental Hospitals, Association of Mental Health Administrators, Council on Social Work Education, National Association for Mental Health, Inc., National Association of Private Psychiatric Hospitals, National Association of Social Workers, National Association of State Mental Health Program Directors, National Committee Against Mental Illness, National Council of Community Mental Health Centers, National Institute of Mental Health, and the National League for Nursing.

Six foundations contributed financial support: The Commonwealth Fund, Maurice Falk Medical Fund, The Grant Foundation, Inc., Ittleson Family Foundation, Milbank Memorial Fund, and van Amerigen Foundation, Inc.

As in any anniversary celebration, the participants at the conference looked back at the past years, often with no little nostalgia. They also looked forward, some with hope, some with pessimism. Appropriately, the theme was "Challenges: Past and Future."

The Federal Program

Before the Mental Health Act

Before World War I inspection of aliens entering the country at Ellis Island and establishment of the Government Hospital for the Insane in Washington, D.C. (named Saint Elizabeths in 1916) were the two main Federal activities in mental health. After the war, interest focused on services for children, and child guidance clinics were established in several cities.

In 1929 Congress established two Federal "narcotic farms for the confinement and treatment of persons addicted to the use of habit-forming narcotic drugs—and for other purposes." The same Act authorized a Narcotics Division in the Public Health Service. This Division in 1930 became the Division of Mental Hygiene with its scope enlarged to include investigations into mental illness. The first farm—or hospital—opened in Lexington, Kentucky in 1935 and the second in Fort Worth, Texas in 1938.

During the next decade the concept of a "National Neuropsychiatric Institute" was formed, but World War II interrupted the development of a national mental health program. The war, however, showed that mental illness was a tremendous problem. More men received medical discharges from the armed services for neuropsychiatric disorders than for any other reason; Selective Service rejected more than a million men for neuropsychiatric disorders. Shortages of professional personnel were alarming—only 3,000 trained psychiatrists in the country, and estimates of shortages of psychiatric social workers were put at 71 percent and of psychologists at 92 percent. Research on the etiology, treatment, and prevention of mental illness lagged

far behind that in other fields. Treatment facilities were miserable. Therapy was limited and usually very expensive.

In 1945 the time was ripe for strong public action, and indeed some action was forthcoming from both private and public sectors. The American Psychiatric Association approved standards for psychiatric hospitals. The Surgeon General of the Public Health Service was convinced of the need for a Federal program in mental health. Legislation was prepared, introduced into both Houses of Congress, passed unanimously (except for one dissenting vote in the House of Representatives), and signed by the President.

After the Mental Health Act

Although the Act was signed, no money had been authorized. So after the first National Advisory Mental Health Council had been appointed, several private foundations were approached and the Greentree Foundation (no longer in existence) provided funds to launch the new program. At its next session in 1947, Congress enacted the first appropriation under the Act and the program was really underway. But it was not until April 1, 1949 that the National Institute of Mental Health authorized by the Act was established.

The decade of the fifties was characterized by a steady and remarkable growth of research work, training programs, and mental health services. During this ferment of activity, Congress in 1955 passed the Mental Health Study Act which authorized the creation of the Joint Commission on Mental Illness and Health to undertake an "objective, thorough, nationwide analysis of the human and economic problems of mental illness." The other relevant legislation was the 1956 Health Amendments Act with Federal grants authorized for investigations, experiments, demonstrations, studies, and research projects looking toward better diagnosis, and better care, treatment, and rehabilitation of the mentally ill.

In 1961 the final report of the Joint Commission's extensive 5-year study was transmitted to the Congress, with recommendations emphasizing basic, long-term diversified research, a more liberal philosophy by the mental health professions of what constitutes and who can provide treatment, and the establishment of a variety of community-based services for the treatment and prevention of mental and emotional illnesses. The recommendations inspired the first Presidential message to the Congress on the Nation's mental health needs; this presentation led to the passage of the Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963, and the words "bold new approach" and "comprehensive community mental health center" were heard throughout the land. Two years later Congress passed the 1965 Mental Health Center Staffing Amendments, and in 1970 the Community Mental Health Amendments authorized construction and staffing of centers for three more years with priority to poverty areas.

Another Commission — the Joint Commission on Mental Health of Children—was established by Congress in 1965. Because the first Commission had not been able to focus on the specific and important problem of children's mental health, the Congress called for another intensive study and series of recommendations. The Commission's 1969 report recommended establishment of a nationwide Child Advocacy system, comprehensive services to ensure the health and mental health of children and youth, and a broad range of services for handicapped children and their families.

Meanwhile, problems of drug abuse

and alcoholism resulted in passage of several pieces of legislation. The Narcotic Addict Rehabilitation Act of 1966 launched a national program for long-term treatment and rehabilitation of addicts; the 1968 Alcoholic and Narcotic Rehabilitation Amendments authorized funds for construction and staffing of new facilities for the prevention and treatment of alcoholism; the 1970 Comprehensive Drug Abuse Prevention and Control Act extended the services of Federally funded community treatment centers to nonnarcotic drug abusers and authorized funds for treatment purposes, for educational materials, and for training personnel. Also passed in 1970 was the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act with the resultant establishment of the National Institute on Alcohol Abuse and Alcoholism within the National Institute of Mental Health.

The Conference Program

Opening Plenary Session

Dr. Bertram S. Brown, Director of the National Institute of Mental Health presided. The other speakers were Philip Rutledge, representing Mayor Walter Washington; Philip B. Hallen of the Maurice Falk Medical Foundation, Dr. Roger O. Egeberg, DHEW Assistant Secretary for Health and Scientific Affairs, and Dr. Vernon E. Wilson, Administrator of the Health Services and Mental Health Administration.

Mr. Rutledge described the many problems relevant to mental health in the District of Columbia and stated that the aims of mental health are "to create a good life for all our citizens."

After welcoming the participants, and remarking on what a long way we have come in the mental health field, Dr. Egeberg went on to say that although the mental health program is very broad, it must work within a constrictive framework; only a small part of the budget consists of discretionary funds and most items are tightly controlled by legislation stipulating the way in which the funds may be used.

Mr. Hallen felt that it was ironic that Federal-private partnership began with a private foundation providing the first funds after the 1946 Mental Health Act was signed. He said that he sees the present time as a critical one for all of us, that we are "demoralized as a nation" and "the mental health professions are a balance wheel of the human condition."

Dr. Wilson pointed out that national expectations in the entire health field are increasing rapidly. He discussed the interrelationships between health and mental health and said that he sees no prospects of a divorce in the marriage between the two.

Dr. Brown again welcomed the participants and read a letter just received from President Truman praising the work that has been done since the Act was signed.

The Challenges—Past, Present and Future

The two former Directors of the NIMH, Dr. Robert H. Felix and Dr. Stanley F. Yolles, and the present Director, Dr. Brown, spoke at a general session for all participants, at which Dr. Francis J. Braceland presided.

Dr. Felix reminisced on the 16 years that he was Director, spoke glowingly of the many major accomplishments in research, training, and services and of the high hopes and excitement of those days. He also expressed deep concern over the present "overwhelming evidence of the lack of interest in mental health" especially as shown in the drastic cutbacks in mental health training programs and deemphasis of the research effort. What the next 25 years will bring, he could not predict, al-

though, he believed, if the program could go forward vigorously, by the end of this century it would be possible to solve the mystery of the schizophrenias, to have a lower incidence of the manic-depressive psychoses, and to understand more fully the factors involved in mental illness and health. His words and presence were honored with a standing ovation.

The more recent past—"the years of growth"—was described by Dr. Yolles. He too pointed to the many accomplishments, particularly in the vast community mental health centers program, and brought out the fact that the entire field of mental health had been extended considerably and its responsibilities thereby deepened. Examples were the involvement in the Model Cities and the Appalachia programs, as well as the pressures to "do something" about suicide prevention, drug abuse, alcoholism, problems related to human sexuality, violence, juvenile delinquency, pediatric psychiatry, and many other special areas. In discussing the financing of the community mental health centers, he reviewed briefly the attempts to secure mental health benefits as a part of health insurance programs; some progress has been made, as, for example, in the Federal Employees Health Benefits Program and the United Auto Workers contract, but, he said "the mental health insurance page of our report for the 60's will have to be colored gray." Dr. Yolles also deplored the present disinterest in mental health, and like Dr. Felix, called for a continuation of progress made in spite of the black clouds on the horizon.

Planning for the future was the major emphasis of Dr. Brown's presentation. Like Drs. Felix and Yolles he believes that foremost among our concerns is to foster research. We cannot afford, he said, to slow the pace of important leads as to the interplay among the various factors which affect man's mental health. And men and women must be educated and trained to carry on this research, as well as to provide desperately needed services. In accomplishing these goals, he called for much greater liaison and cooperation between all the agencies, public and private and at all levels of government, concerned with mental health. For the new way of life in the national mental health programs, he used the term "cooperative advocacy." As an example, he cited the recent joint funding by the Office of Education and the NIMH of the nation's first child advocacy demonstration projects. Such cooperative advocacy could also further our goals in another high priority area—crime, delinquency, and social deviance. The attack on minority group mental health problems is another fruitful and important area for cooperative advocacy. Finally, on the matter of financing he said, ". . . my conviction is that the necessary funds can be forthcoming—from a variety of public and private sources, if need be—to strengthen and expand our modest research effort, our continuing need for well-trained manpower, and our need for increased community mental health services."

Research, Training, and Delivery of Services

The remainder of the program consisted of presentations and symposia on research, training, and delivery of services.

Research—In addition to a session on "Research—Reminiscences and Prospects" at which seven distinguished scientists, all alumni of the NIMH program, discussed their experiences and impressions of the nation's research effort, there were presentations on the Neurology of Reward, Punishment, and Affect; Mechanisms Underlying Psychosomatic Disorders; Social Change and Human Behavior:

Perceiving and Thinking; Drugs and Affective Disorders; Observations on the Psychology and Biology of Schizophrenia; and Biochemical Approach to the Study of the Nervous System.

Manpower and training—The sessions included panels on Development of Behavioral and Social Science Training in Mental Health; Training Opportunities for Minority Groups; New Careers in Mental Health Training; Mental Health Training for Children's Services; Mental Health Training—Its Past, Present, and Future; and Innovations in Training for Community Mental Health Practice.

Delivery of services—The topics on delivery of services were the Evolution of the Partnership of Health and Mental Health Services; Mental Health and Other Services for Children; Drug Abuse—Is Prevention Possible; Youth and Government in the Age of Aquarius; Changes in Mental Health Care, Treatment, and Rehabilitation; The Impact of Financing on the Delivery of Mental Health Services; Will National Health Insurance Change the Delivery of Mental Health Services; Mental Health Services for the Disadvantaged; and Attitude Change—The Road to the Prevention of Alcoholism.

The Banquet

The evening session was in the form of a banquet attended by many notables representing all fields of mental health, professional and voluntary organizations, and several members of Congress. Mrs. Burton Joseph introduced the distinguished guests and Irving H. Chase, incoming president of the National Association for Mental Health, introduced the speaker—the Honorable Elliot L. Richardson, Secretary of Health, Education, and Welfare.

Mr. Richardson told of his long involvement with the mental health field, including work on the legislation in Massachusetts to establish community mental health centers. He reaffirmed his belief in the centers and in the integrity of mental health within the totality of the Nation's health care system.

Silver Anniversary Awards

The Conference closed with a plenary session and the presentation of awards to honor distinguished achievement in the mental health field over the past 25 years.

Presiding was Mrs. Jeannette Rockefeller and the speaker was Mrs. Harry J. Elam. Mrs. Elam's impassioned and—as she said—"disturbing" speech deplored the fact that in spite of accomplishments in mental health, the poor, the powerless, the blacks, the Indians, the Mexican-Americans and many other groups are still sadly and agonizingly neglected. The problem of racism, she said, must be faced up to as the Nation's major mental health problem.

James E. Chapman presented the seven awards, three "Silver Anniversary Mental Health Awards" and four "Special Recognition Mental Health Awards."

The Silver Anniversary Awards were presented to Dr. Robert H. Felix, Senator Lister Hill, and "the concerned citizens of the Nation." Dr. Felix received the award for creative leadership in the development of the National Mental Health Act of 1946. As the first Director of the National Institute of Mental Health he initiated and administered a program which has consistently led the way in developing a comprehensive approach to improving and expanding mental health research, training, and services. His continued dedication to improving the well-being of his fellowman has been a central influence in the

growth of the national mental health program.

The award was presented to Senator Hill for his steadfast advocacy of progressive health and mental health legislation. He provided continuing leadership for the growth of Federal programs in health research, training, and services, earning him the respect of his colleagues in Congress and the lasting appreciation of a greatful nation. His particular interest in the mental health field was a source of great strength to the growth of the national mental health program.

The award went to "the concerned citizens of the Nation" for voluntary contributions of time and energy which have been a major positive force in the struggle to improve the mental health of the Nation. From the early days of this century and before, citizens and citizen organizations have provided the public support and continuing involvement at local, State, and national levels which have been key factors in the growth of the national mental health program.

The Special Recognition Awards were presented to Drs. Esther A. Garrison, Milton Wittman, Francis J. Braceland, and David Shakow. Dr. Garrison received the award for innovative and vigorous leadership in the field of psychiatric nursing education. Since the inception of the national mental health programs, Dr. Wittman has had the key responsibility for the development of programs which have had a lasting impact on the field of psychiatry for more than 40 years. Dr. Braceland's leadership in the field of psychiatric social work has contributed to the education and training of mental health personnel and the improvement of clinical services for the mentally ill. In more than 40 years of professional work. Dr. Shakow has made unique research contributions to an understanding of psychopathology and has been a leader in defining the role of the clinical psychologist in the mental health team.

In closing the Conference, Dr. Bertram S. Brown thanked all those who had been involved and commented that although no one can know what the future will bring, one sometimes looks back in order better to look forward.

STATEMENT BY FORMER PRESIDENT OF THE UNITED STATES HARRY S. TRUMAN ON THE OCCASION OF THE TWENTY-FIFTH ANNIVERSARY OF THE SIGNING OF THE NATIONAL MENTAL HEALTH ACT - JULY 3, 1946.

There is no single piece of health legislation approved during my term that is to me a source of greater pride than the National Mental Health Act of 1946.

Laws, however, are just the framework for action, which, without the concern of persons like those attending this Silver Anniversary Conference, would accomplish little. The mental health profession has made the most of the legislation which we provided on July 3, 1946.

I trust the next twenty-five years will witness a furtherance of governmental and private partnership, which is so necessary to solution of great public problems.

Harry S. Truman

For Further Information——

The *Mental Health Digest* contains condensations of journal articles and other materials. The condensations must of necessity omit many details, especially those concerned with methodology and discussion. The original articles also often contain excellent reference lists and bibliographies. Readers interested in particular digests are therefore urged to consult the journal or other source in which the material first appeared or to ask the author for reprints. Addresses of authors whose articles are digested in this issue are listed below. If an article has multiple authors, only the first author or the author from whom reprints may be obtained is given.

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Herbert A. Simon, Ph.D., Graduate School of Industrial Administration, Carnegie-Mellon University, Pittsburgh, Pa. 15213

Lawrence H. Weiner, Ed.D., Director of Special Education, Barrington, R.I. 02806

Additional information may also be obtained from the National Clearinghouse for Mental Health Information, which maintains a comprehensive scientific and professional information service on all aspects of mental health. Inquiries may be addressed to:

National Clearinghouse for Mental Health Information
National Institute of Mental Health
5600 Fishers Lane
Rockville, Md. 20852

The Federal Government and Social Science Policy

HENRY W. RIECKEN

The notion of a policy implies deliberate allocation of resources through means intended to achieve a chosen end. It also assumes the existence of resources—men, organizations, money, time, ideas—and suggests ways of bringing them to bear. Finally, it implies agreement and collaboration among men and institutions to execute the steps of the policy.

By these criteria, the United States does not have a coherent social science policy, although one can describe how resources are mustered and brought to bear on the "doing" of social science. The Federal Government does utilize social science to formulate and execute domestic economic policy, but that does not constitute a policy for the development of social science.

Number and Distribution of Social Scientists

There are about 110,000 active social scientists in the United States, and about 60 percent of them are engaged in university teaching, research, and service; many are faculty members of universities which grant degrees in social science disciplines. Government agencies employ about 10 percent of the 110,000 while the remainder is distributed among industrial and commercial firms, nonprofit research and service organizations, and various forms of private practice and consulting.

These manpower resources are very unevenly distributed among the various social science disciplines. By far the most numerous are psychologists and economists—about 30,000 and 25,000, respectively. There are perhaps 18,000 historians, 15,000 political scientists, and 12,000 sociologists. The other disciplines in the behavioral or social sciences collectively number somewhat less than 10,000 members. Looked at in terms of their employment, the disciplinary groups are also enevenly distributed. Only psychologists and economists turn up in sizable numbers in industrial and commercial firms, in private practice, or consulting. Psychologists and economists are also extensively employed in government agencies, and both political scientists and sociologists also occupy both research and administrative positions in government agencies. Nevertheless, most social scientists are located within the academic community, where a major share of their effort is given to education and training of future professionals.

Federal Agencies Supporting Social Science

The collection of autonomous units on the social science side is almost matched by the number and variety of Federal agencies which encourage, support, or perform social science research and training. The role of these agencies is a major one which increased rapidly from 1958 to 1968, when Federal funds available to the social sciences increased from $40,000,000 to nearly $300,000,000. The Federal Government contribution in 1968 represented about 35 percent of the $803,000,000 expended for all research and development activities in the social sciences that year.

Each of at least 25 distinct and separate Federal agencies provided more than one million dollars a year for the support of social science research, whether for its own sake or in connec-

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tion with their particular governmental missions. Four large agencies have had an especial impact upon social science research, and their combined budgets account for two-thirds of the total expended for research by the Federal Government in the latest fiscal year for which complete data are available. These four are: the Department of Health, Education, and Welfare; Department of Defense; Department of Agriculture; and the National Science Foundation. The contribution from the remaining 19 or 20 agencies that do support social sciences is not negligible, however, and illustrates the American principle of pluralistic support. In the context of social science, this means that many agencies support research which may take in a common disciplinary classification—for example, economics or sociology—despite differences in emphasis related to the missions of the various agencies.

Attempts at Coordination

At first glance it appears that this vast array of performers and supporters results in a disorderly "non-system" which could function only imperfectly, if at all, and there is a measure of truth in this appearance. There is no effective, single coordinating body, although various attempts have been made from time to time to construct one.

National Science Foundation—The National Science Foundation, originally charged with support of science in the national interest, was also designated as the agency for the development of a coordinated science policy. The Foundation was not able to discharge this responsibility for several reasons: It was a competitor with existing agencies for power, funds, and influence. Starting with a small budget and a tiny staff in 1952, the Foundation could not regulate or influence its older and more powerful siblings in health, education, welfare, defense, and agriculture. Lacking access to the President, lacking legislative authority to direct, check, head, or curb the scientific concerns of other agencies, short on financial resources, the Foundation was forced to pursue an indirect course, gradually building a case for the support of basic, as opposed to applied, research through scientific projects that were of lesser interest to the mission-oriented agencies, though often of greater interest to the academic community. The National Science Foundation modeled itself after some of the more successful private foundations, making small grants-in-aid for time-limited projects in physics, chemistry, and biological sciences, almost entirely to scientists in academic institutions. Constrained from establishing laboratories or research institutes of its own, and constrained from making block grants to universities or long-term commitments to particular investigators, the Foundation developed the project system to a considerable degree of perfection. Concern with research projects left little time for the development of science policy guidance, and little attention was paid to trying to coordinate the more influential and massive agencies in science.

Office of Science and Technology—Responsibility for development of science policy was removed from NSF in 1961 and granted to the newly established Office of Science and Technology in the Executive Office of the President. The OST was an outgrowth of the office of the President's Science Adviser. The President's Science Advisers (also the Director of the Office of Science and Technology) have always been physical scientists or engineers, and they have been con-

fronted by massive and expensive problems whose solutions were based largely in physical and biological sciences. The advisers generally have not concerned themselves with the problems of the social sciences nor have they developed any staff to fill that function.

Until recently, there was no social scientist on the President's Science Advisory Committee, although that was recommended by an advisory group in 1962. Studies and reports with which the President's Science Advisory Committee concerned itself rarely included social scientists, even when the topics touched very closely upon socioeconomic concerns. Thus, the policy of the Government in the social sciences has either been undirected or has been directed by physical and biological scientists, almost inadvertently.

Federal Council on Science and Technology—The Federal Council on Science and Technology, consisting of representatives from within the executive branch, for awhile had the responsibility for exchanging information and coordinating efforts among Federal agencies. The Federal Council made one or two rather ineffectual attempts to review and assess support of the social sciences but, by and large, it too confined itself to physical, biological, and technical engineering matters. Furthermore, it had difficulty in making decisions that might affect the distribution of power and influence, and it had no overt and explicit mechanism of control.

Bureau of the Budget—Perhaps the most effective control mechanism is the bluntest—the Bureau of the Budget (recently reorganized as the Office of Management and Budget), which is responsible for preparing the President's requests to the Congress for appropriations. This powerful instrumentality of the Executive must adjudicate the claims of agencies for the limited funds available. The OMB staff must, furthermore, stand between the administrator of the Federal agency and the President himself, interpreting the wishes of each to the other. Although many of the Bureau's staff are trained in one of the social sciences and have been sympathetic with the interests of these disciplines, they too are preoccupied with items such as space, military hardware, health, and civil aviation. The development of a rational policy for the social sciences can claim only a small share of their attention.

Congress's role—Finally, Congress itself has had a role in the shaping of social science "policy." For many years, a populist suspicion of social science and social planning—tending to confuse these terms with socialism—characterized the Congressional approach to a social science policy. Such ideas seem largely to have disappeared from the present scene, although one can never be confident that some version of them will not re-emerge.

When Congress was debating the language of the act which created the National Science Foundation, two rather distinct and strong views were taken: one was that the word "science" was to encompass simply the "hard" sciences, thus excluding any entry of the Foundation into the social science field. The other view, espoused by many scientists and by some members of Congress, would have included the social sciences explicitly and specifically. Neither view prevailed in pure form. Instead, compromise language permitted the Foundation to proceed at its own pace in developing programs in social science. This it did, commensurate with growth in its budget and development of expertness on its staff, and with careful scrutiny

of the appropriations committee of the Congress. In 1965, Congress enacted legislation which included the social sciences and broadened the Foundation's authority to conduct applied as well as basic research. This important step in the development of a social science policy is only beginning to be understood because of delays in implementing this enlarged authority, but it is clear that this is a very significant step.

The Science and Astronautics Committee of Congress also requested the National Academy of Sciences to create the Committee on Science and Public Policy, which could serve Congress by providing advice on science development.

The Committee on Science and Public Policy has operated so far primarily to commission reviews of scientific disciplines and topics. Characteristically, it began with physics and chemistry, and went on to astronomy, mathematics, and computation, but it did commission a study on the behavioral and social sciences which appeared in October 1969. This study attempted to survey the social sciences —their accomplishments, their promises and likely developments, their needs and the means of satisfying them.

Although the report was intended for the Congress, it is widely read and is expected to affect policies and programs of several executive agencies as well. The recommendations of the Behavioral and Social Sciences Survey do not add up to a comprehensive policy but, taken together with other current developments, they suggest a possible shape for one.

In summary, then, the United States presents many separate institutions engaged in and supporting social science research without a single, coherent coordinating body or a well-articulated set of guidelines. While these enterprises are large compared to social science groups in the rest of the world, they are small compared to the total body of scientists in the United States. The efforts of social scientists have both benefited from inattention and suffered from the suspicion that their disciplines were subversive. The development of a policy for these disciplines has been marked by a number of ineffectual attempts to coordinate them, and by the proliferation of a "non-system" of support and performance that is both ramified and interconnected in a complex manner.

Pluralism and Flexibility

It is not simple to characterize the nexus between social science and the Federal Government. Plural sources of support and performance of social research allow for many alternative paths through the connections. Since there are many alternatives, there is some competition of ideas and purposes. A social scientist whose proposal for research is rejected by one agency can turn to another. On the other hand, the agency which finds that Professor X at the University of Z is not interested in certain specified research can seek out another professor at a different university, or call on a private research organization.

Symbiotic Power Distribution

Formally, the power of program dicision and allocation of resources lies with the governmental administrative agency, subject to negotiations with Congress as legislator and as appropriator of funds. But in most agencies, both program and resource allocative decisions are made with advice from outside the government—most often on the part of committees composed of academic social scientists. Such committees vary in the influence they

exert, but most of them have argued for the support of basic research and for the advancement of social science in its various disciplines. It is an interesting, instructive outcome of a social process whose intricacy was not fully appreciated—and whose outcome was miscalculated by the scientific community. At the time the National Science Foundation Act was being considered, there was considerable anxiety that Federal bureaucrats would reshape the course of scientific investigation to suit administrative purposes. In fact, what seems to have happened is the reshaping of administrative purposes to fit the course of scientific research. On the whole, where the academic community has had a substantial voice, its wishes have been heeded, its needs met.

Alliances Outside the Social Sciences

Social scientists, within or outside universities, generally operate from a weaker power base than do physical scientists and engineers, biologists and physicians. Social scientists, therefore, have usually found it advantageous to form alliances with their more powerful colleagues.

The liaisons, while certainly not conscious strategy, can surely be considered an effect of the Federal Government on the way the social sciences have developed. The scientific orientation of NSF encouraged a positivistic type of research; quantitative, empirically oriented, and experimental research received the most favorable attention. Humanistic models of intuitive approaches, purely descriptive accounts, and "pure" theory tended to take a secondary place. At the National Institutes of Health, somewhat the same attitudes prevailed, although much more consideration was given to "clinical" research, after the medical model.

Neither agency encouraged research on politically controversial questions or other subjects that were, in the 1950's at least, considered to be none of the government's business—race and religion, for example. This reluctance was motivated by a sense that government agencies risked their impartiality in supporting such research and could scarcely avoid the appearance of taking one side in a controversy. A certain political prudence vis-á-vis the Congress was admixed with this motive and, in the case of NSF, a rather strict interpretation of the fundamental charter of the Foundation to encourage only basic research.

The character of this alliance of social and natural scientists and its effects on the growth of the disciplines have been to emphasize a portion of these disciplines rather than to spread funds evenly across the spectrum. Psychology, anthropology, sociology, and economics have received more attention than political science and history, for example. In recent years, the study of political behavior has been assisted by Federal agencies, and there has begun to be some attention to historical research following quantitative, proposition-testing lines. More conventional history has had some help from a different Federal agency, the Endowment for the Arts and Humanities, which has also announced its interest in those aspects of social science that are "studied by humanistic methods."

Other kinds of alliances bred other problems: in agriculture, defense, and some parts of the Public Health Service, social scientists were drawn into applied research whose objectives were defined by administrators or by applied scientists, physicians, and engineers. As a consequence, certain fields of research have been heavily

funded and well developed; the applied, problem-centered nature of research in agriculture, defense, and public health has again favored economics, psychology, anthropology, and sociology.

Numerous other Federal agencies employ or suppprt social scientists without alliances with other disciplines: Labor and Commerce, especially in economics and statistics; Veterans Administration in clinical psychology; the Office of Economic Opportunity in sociology and economics; and a handful of small bureaus, commissions, and task forces in various fields. The social science in these agencies is mostly applied research.

Not all social scientists find the "alliance" strategy congenial. Some believe that social sciences are not respected and will not flourish in institutions dominated by physical and biological scientists. Others think that the natural science model is false for social research, and still others seek an independent governmental organization for social science in order to achieve greater visibility and recognition. The social science community is divided on this issue, however, and another portion of it holds opposite convictions on the foregoing points, believing that social science has benefited intellectually and politically from association with other sciences in government agencies. The debate between these points of view was documented in hearings on a Senate bill to establish a National Social Science Foundation—an action which remains a possibility.

Organizations with Special Roles

In addition to the universities, the government agencies, and the coordinating bodies already mentioned, the social science scene in the United States includes three organizations that play special roles in regard to social science policy. All are private, nonprofit organizations which interact in diverse ways with the academic community and the Federal agencies.

The Social Science Research Council (SSRC) was established in 1923 for the purpose of advancing the field. The Council operates through a system of committees brought into being when there develops a consensus that some topic needs and is ready to benefit from a concerted, often interdisciplinary, effort. Council committee members are chosen for their special knowledge and usually come from a number of universities. The Council has, throughout its history, nurtured a variety of research and training tasks, from quite fundamental methodological questions to fairly applied ones.

The Council is currently engaged in helping to develop better methods for the evaluation of compensatory education of disadvantaged children, and in assessing the state of training in foreign language and foreign area studies —both tasks being financed by the Office of Education. In addition to research and training in numerous foreign areas of the world, the Council has committees concerned with the advancement of social psychology in Europe and in Latin America, and with the graduate education of political scientists and sociologists in Italian universities.

A Committee on Comparative Politics has made contributions to cross-national comparative research, and the Committee on the Biological Bases of Social Behavior is conducting short training programs in biological research for social and developmental psychologists, sociologists, and anthropologists. Through such activities, the Council attempts to advance the "state of the art" and to open up new directions in research.

One of the many arms of the National Research Council is its Division of Behavioral Sciences, which came into being about 7 years ago. This Council, chartered by the Congress and directed to provide advice to the Federal Government, also has a set of working committees composed primarily of university professors; it is linked to Federal agencies through the advice-giving mechanism. The Division currently provides guidance and evaluates proposals on basic research for the Office of Education, and it will conduct a research program on recreation and leisure for the Bureau of Outdoor Recreation. The Division also advises on the management and conduct of behavioral science research in the Department of Defense, and it administers the Armed Forces-NRC joint committees on Vision and on Hearing, Bio-acoustics, and Bio-mechanics.

The third organization with a special role is the Russell Sage Foundation. It operates both as a grant-making and a research-conducting body, having a professional staff actively conducting research, as well as a rotating group of fellows in research, study, or collaboration with the permament staff. The Russell Sage Foundation has no direct or official connection with the Federal Government, but the talents of its officers and staff are drawn upon frequently to give the Government advice in the social sciences. A former Russell Sage Foundation president was chairman of a National Research Council Advisory Committee on Government Programs in the Behavioral Sciences, and the current president of the Foundation was chairman of a Special Commission on the Social Sciences established by the National Science Foundation. Other members of the Russell Sage staff have served in policy advisory positions concerned with the national census, development of social indicators, prevention of crime, and improvement of rehabilitation. The Foundation has taken action in a number of areas related to public policy—for example, stimulating the introduction of social science into the education of lawyers and physicians; examining the social role of testing in the American educational system; and the protection of personal privacy in social research.

These three organizations are important switching centers for traffic between the Federal Government and the community of academic social scientists. To the extent that the United States may be developing a policy for the social sciences, these organizations are helping to formulate it.

Toward a Social Science Policy

It is significant that these three organizations have played major roles in the preparation of three recent reports on the social sciences—reports whose recommendations can be read as a sketch of what might be a national social science policy for the coming decade. The reports are: Young Committee, *The Behavioral Sciences and the Federal Government.* National Academy of Sciences, Publication 1680 (Washington: 1968); Brim Commission, *Knowledge into Action; Improving the Nation's Use of the Social Sciences.* National Science Foundation, NSB 69–3 (Washington: 1969); BASS Survey, *The Behavioral and Social Sciences: Outlook and Needs* (Englewood Cliffs, N.J.: Prentice-Hall, 1969).

These three reports have similarities in purpose but differences in emphasis. Although no one report pretends to outline a comprehensive policy for social science, it is possible to sketch the broad outline of a social science

policy in which there would be no substantial disagreement among the three recommending bodies: (1) There should be stronger representation of social science at the levels of the President's Science Advisory Committee and the Office of Science and Technology. (2) Government agencies should expand and improve the collection and dissemination for research purposes of statistical data about American society. (3) Social scientists should develop a system of social indicators which cover more aspects of American life. (4) The National Science Foundation should increase attention to and support for the social sciences, including the improvement of social science education. (5) Social science research outside the United States should be supported by government agencies which have general scientific development purposes; and, wherever possible, such research should be conducted on an internationally collaborative basis. (6) Measures to improve education and research in applied social science should include: the establishment of Schools of Applied Behavioral Science, the creation of social problem research institutes, and the founding of a National Institute for Advanced Research and Public Policy. (7) Curricula of professional schools should include more social science instruction and greater emphasis upon social research. (8) Government agencies should support a broad spectrum of social science research relevant to their own programs and missions. (9) Federal government agencies should strengthen their staff competence in social science.

Overall, the tone of these reports is consistent—a heavy emphasis on the desirability, need, and prospect of bringing social science into closer conjunction with the practical affairs of the society. It is clear that American social scientists are not so much dissatisfied with the practices of the past as they are eager and optimistic about their future prospects for a more important role in the affairs of the nation. They are proposing a social science policy that will help them to achieve it.

The extent to which the policies recommended will be put into effect remain uncertain. The social sciences are almost sure not to realize all their ambitions in the near future in the United States. Yet there are signs that there is great interest in the possibility that social science may help a troubled nation. Social scientists have recently been invited to work on problems of education, drug abuse, violence in television performances, law enforcement, and the administration of criminal justice—tasks that will test their ability to make practical contributions to social policy and will surely have feedback effects on American policy for the development of social sciences.

Planning for Comprehensive Mental Health Programs

ALDRED H. NEUFELDT

The planner of mental health services should concern himself with at least three distinct phases of development in planning for a mental health program: (1) he needs to identify and clarify the basic concepts to be dealt with in effecting a program so that clear goals can be established; (2) the actual structure of the program's operation needs to be drawn up; and (3) the actual program must be introduced so that some evaluation of its impact can be obtained. Mental health planners usually expend the most time and effort on the second phase to the detriment of the first and third. This article is a preliminary effort at fostering a keener awareness of the process of conceptualization (phase one) and program implementation (phase three) in addition to offering a few comments on the use of available resources.

Most social reform programs are entered into with a great deal of enthusiasm, advocated as though they are certain to be successful, but end up in the frustrating position of not having met preconceived expectations and with no interpretable evaluation. The reasons for this lie in the political jeopardies any administrator faces in advocating program change given the known discrepancy between promise and possibility. Considerably fewer of these jeopardies would exist if social reforms were introduced in a manner providing a clear enunciation of relevant factors (rather than a screen of ambiguity) and with appropriate controls.

Comprehensive community mental health provides an example of one such typical reform movement. Community mental health has been termed a revolution in which mental disorder is no longer considered a purely private misery; rather, the trouble and the cure are conceived as relating to the entire web of social and personal relationships in which the individual is caught. While the movement has had many apparent successes, one finds a considerable difference of opinion as to what its specific achievements have been, let alone whether the changes in attitude are permanent or temporary. This knowledge is of little comfort to the administrator, clinician or other mental health worker in a position to influence the direction of mental health programing since he is apprised only of the argumentation but not of the fundamental issues at stake.

Despite these problems mental health programs can be introduced so as to allow for an adequate evaluation of their impact. Such an evaluation ideally is based on an experimental introduction of the program. This implies that program planners have determined the population catchment areas of implementation essentially on a random basis, and have insured the availability of adequate control populations for comparative purposes.

In planning for comprehensive community programs a number of conceptual problems need to be dealt with effectively so as to allow for the formulation of appropriate program goals. The failure to do so is at least partly the reason for some of the notable failures in community mental health programs over the past decade.

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The terms "comprehensive" and "community" are frequently used to describe programs as if they have become realized when in fact few, if any, mental health programs are either truly "comprehensive" or fully "community." "Comprehensive" implies that considerable attention needs to be directed toward the development of services now either in an embryal state or not considered at all, including such activities as early case findings and "case losing" as well as the other intervening activities. "Community" in reality implies that a variety of communities, representing both providers and consumers of service, need to have an active voice and be heavily involved in mental health programing. Taken together the terms are reflexive: that is, mental health services are not likely to become comprehensive if in fact the community does not become more of a participant then it has in the past. The reverse also holds.

Another conceptual problem relates to the model of service delivery that is adopted. The literature has abounded with commentary on a continuing debate as to whether the so-called "medical model" or what might be termed a "psycho-social model" of service delivery is most appropriate. Neither model is entirely appropriate, but both have a legitimate role to play. We need to move toward a conceptual system which embodies both, and is able to differentiate the healthy from the ill, the normal from the abnormal, and the deviant from the typical without requiring the equation of abnormality and deviancy with illness. A dynamic and innovative comprehensive community mental health program obviously needs much more than traditional conceptualization. Such programs also demand a considerable amount of knowledge about social process and social organization.

One of the more helpful contexts in which to place the conceptual problems is afforded by *systems behavior theory*. In brief, living systems can be characterized as ranging from cells to nations according to a hierarchy of levels linked so as to permit logical statements of the relationships between the various levels. Within the community mental health frame of reference the first concern is with the client (organism) who is comprised of many subsystems (organs and cells). The organs (and cells) may represent their literal phsyical and physiological embodiment (hence having implications for chemotherapy, for example), or may represent functional subsystems such as the concept of the "intrapsychic" (hence having implications for psychotherapy, for example). For purposes of our mental health programs the next larger structure-functional concept is probably the "community," comprised of many groups, but not yet comprising a society.

A systems approach such as this can be most useful in considering the social dynamics between organizations, between individuals within organizational structures, as well as within individuals. A general conceptual framework such as this permits the consideration of both the physical and functional concepts necessary to the understanding of mental health and illness, and thus fosters the establishment of realistic program goals. Perhaps the major challenge of community psychiatry is the identification of the needs of an individual patient and the use of services for the patient in an appropriate manner. By adopting the systems approach one can translate the spectrum of services available into a meaningful hierarchy paralleling that described above.

The usual objective of treatment in the community mental health setting is to maintain the patient as close to his intimates as possible. If sustaining him at this level is insufficent, the *input* side of psychiatric intervention (the spectrum of services available) may be viewed as a series of increasingly supportive levels of intervention. The *output* end of our treatment program needs to be oriented toward decreasing the level of support, while working toward the return of a patient to his circle of friends.

The first level of sustaining mental illness beyond the self has to do with the person's intimates. This "primary" group (usually the family) can also become potential recognizers of pathology. Since the goal of intervention, once the pathology is recognized, is to return the patient to this group, these intimates need to be involved in the treatment process from the beginning as they will in the end determine the success of the intervention. The second level on the input side may be represented by the case finders. Their task is simply to recognize and announce that help is needed, perhaps with referral to appropriate services. A third level is provided by a small group of professionals concerned with problem definition and outpatient care. A functional community program takes as its goal the identification of specific problem areas that need to be dealt with and the utilization of services that are available in the community in restorative efforts. If sustaining at the outpatient level is insufficient a fourth level of intervention, semiprotective in nature, should be available. Failing this, the most radical type of intervention is provided by the total institution.

Such a living-systems approach can accomodate the entire spectrum of services one needs to consider in a "comprehensive" program. It allows for a logical role to be played by both the medical and psycho-social models, and it delineates the various "communities" that need to be considered. It presents a framework within which concepts such as *continuity of care*, relatively *short-in-hospital stay*, and *environmental manipulation* can be tied together, as well as the larger conceptual problems. It gives the planner the possibility of a logical exposition of needs against which resources can be matched.

One characteristic result of the community mental health movement has been a marked decline in the census of mental hospital patients. This raises the question of how many "total care" psychiatric beds are required to meet the population need—a pertinent question both to the clinician, as it relates to the conceptualization of service delivery, and to the administrator because of the high cost associated with total care facilities. No definitive answer is yet available.

Resources such as sheltered workshops and halfway houses are only now beginning to be effectively integrated into dynamic, comprehensive programing. There has been a tendency to use them on the way *out* of hospital only. It would be worthwhile to consider the active use of such facilities prior to the necessity of a total care environment, thus promoting the possibility of *halfway in* as well as *halfway out*.

The single biggest factor in the maintenance of a low in-hospital psychiatric census in some areas of Saskatchewan has been the availability of well trained Community Service Personnel to intercept emotional problems at a relatively early stage and to provide appropriate aftercare services. The bulk of this community has been performed by teams of social workers

and community nurses, with medical consultation primarily provided by psychiatrists, and increasingly by general practitioners in the community as well. The two most salient points would seem to be: The concept of regionalization (with specific teams of Community Service Personnel serving specific geographic regions) now being widely adopted is a successful approach in rural population areas; and the system of service whereby medical personnel primarily serve in a consultative capacity to social workers and community nurses has been found to efficient, effective, and satisfying to all concerned.

Several ingredients are crucial to the success of any community health program: (a) knowledgeable, determined leadership, skilled in identifying and resolving conflicts among a variety of contending interests; (b) a source of legal authority and enforceable sanctions; (c) a reliable source of money in proportion to established goals; (d) the capacity to combine public and private resources of the community with resources of other levels of government; and, (e) a capacity for skilled analysis of community health problems, i.e., a highly trained research staff. Whatever the organizational structure developed, it should at least permit the synthesis of all primary mental health resources if it is to be effective.

The organizational pattern wherein one central government agency assumes responsibility for the delivery of all primary services in addition to the establishment of legislation, and development of necessary fiscal and personnel resources can meet the needs effectively as has been demonstrated in a province such as Saskatchewan. It is probable that this province's mental health services would not have developed to the point that they have without this kind of centralization. The primary advantage is that it lends itself to organizational efficiency.

A somewhat looser organizational arrangement that seems promising is for the central government to withdraw from the provision of services in favor of some more localized community government agency such as a regional board. The key element to such a plan is that the enabling legislation must provide sufficient strength to the board to effect needed mental health services and be not so restrictive as to discourage participation of the various levels of resources. From the experience that has been gained in various parts of North America, this kind of structure would seem to work quite well given a full-time, well-qualified program director, a reasonable core staff of Community Service Personnel responsible to the program director, and some additional supportive and research personnel. In this arrangement all inpatient and other medical services can conceivably be provided through the general hospital system with its affiliated physicians.

The advantages definitely lie in the direction of increased community participation in the formulation of comprehensive programing with the consequent potential of better secondary prevention; disadvantages rest in the vulnerability of the system to the nature of the leadership provided. A particular advantage of the decentralized structure over the centralized one is the relative ease of reorganization if and when necessary.

Some Anthropological Issues Related to Community Mental Health Programs In The United States

MADELEINE LEININGER

Ideally, the goal of a comprehensive community mental health program is to provide comprehensive psychiatric services to individuals, families, school children, and to other groups in a particular community. Accessibility to mental health facilities, familiarity with the community, and the provision for a wide variety or types of psychiatric services are some of the criteria used to support a comprehensive community mental health program. In addition, any comprehensive mental health center is supposed to provide five essential elements: inpatient services, outpatient services, partial hospitalization services, emergency services, and education and consultation services available to community agencies and professional personnel. Other services may be found such as diagnostic services, rehabilitation services, and pre-care and aftercare services in the community, plus research, evaluation, and training programs.

A typical comprehensive community mental health center has as its focus a demographic unit or a "catchment area" varying in geographic location and in population. From an anthropological view, one of the most obvious problems is related to the criteria used to define "catchment area." A catchment area must be of a certain population size in order that the agency requesting funds for a mental health center will be approved for Federal funding. Frequently an urban catchment area becomes a highly arbitrary geographic location with questionable natural community boundaries. Often these geographic boundaries split local communities in an artificial and fragmented manner. In general, these "catchment areas" do not always give full consideration to the wholeness of a community—a community in which there are definitive cultural, social, political, and economic group ties which bind the people together. Knowledge of what constitutes natural and viable communities with their particular social, cultural, political, and religious bonds is crucial for mental health personnel in order to determine natural catchment areas and to avoid precipitating additional emotional stresses upon people by inadvertently dividing their community. Anthropologists and sociologists should be consulted to help psychiatric staff determine the different communities in an urban or rural area and what would constitute viable and natural catchment areas for a community mental health program.

Another critical issue regarding the community mental health movement is the conceptual model used for helping people. Currently, the model for helping people is largely *hospital-centered*, that is the model has been derived from a *hospital* frame of reference, and so the model is an institutional one encompassing certain cultural norms and practices that one finds in a hospital social system. When people come to a hospital, they experience care and treatment which is prescribed by the norms of a hospital as a closed social system. There is an urgent need to shift the focus from the largely hospital-centered approach to a truly *community-centered philosophy* of care and treatment. We could

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then begin to understand the patient as a participating and on-going member of a special community group with its special cultural norms, and this would be the important baseline for developing a community mental health program. Mental health programs need to be built upon a knowledge of the community with its special structure, function, and dynamic community process.

One of the major reasons why a truly community approach has not been universally adopted and implemented is that psychiatric personnel need substantive knowledge in the social sciences to help them conceptualize and understand the nature and dynamics of communities. The problem appears to be largely an educational and research one in which there is a need to reorganize medical, nursing, social work, and clinical psychiatric curricula to incorporate relevant community science content. We need more research studies which focus upon man's cultural, psychological and social *adaptation* abilities to stresses in a community and the implications for understanding mental illness and health in a particular community.

There is still a tendency to stress more the *psychopathological* aspects of a patient's behavior than the health aspects or ego strengths. The *preventive and maintenance aspects* need to be examined critically to help the patient maintain his optimal state of mental health. The practice of using diagnostic labels tends to engross psychiatric personnel to consider the "disease" of a person and does not emphasize the adaptation and health adjustment responses of an individual. People have patterns of adaptation in living, working, and functioning in an urban, suburban, and rural community and illness can probably be best understood from this kind of a broad perspective, including from a social class viewpoint. With the focus upon *prevention of mental illness*, we will discover ways that cultural and social forces have influenced mental states. Normative behavior and deviations from cultural norms are important means to understand people as well as the community's cultural defenses or "safety valve mechanisms" which help them maintain their optimal mental, cultural, and physical health.

Another common problem found in the current community mental health movement is the perceptual and cognitive gap which exists between the professional staff and the lay person's view of the patient's problem, treatment, and rehabilitation. The patient may comply with professional staff to receive temporary relief, but often he does not understand the treatment and how it will help him. When a patient is treated in a hospital for a period of time, he becomes acculturated and socialized into the expected norms of behavior prescribed by the professional group. However a patient may discover later that professionally prescribed norms of behavior may not be appropriate to the patient's daily way of living.

Some of the common professional goals in helping psychiatric patients have been stated in the literature such as the achievement of acceptable forms of interpersonal behavior so the patient will relate effectively with others, increasing the patient's responsibility for his own behavior, helping the patient to work and live effectively with others, and improving the patient's ability to communicate with others. The lay person's views and goals may vary considerably from these professional ones which make it difficult to treat these patients. The professional staff should have information about the patient's beliefs of

treatment and cure, how they fit with the cultural norms, and how a change in the patient's behavior will fit with the family structure and community group in which he lives.

The hospital therapeutic community concept helped psychiatric personnel to become aware that the hospital was a social and cultural system and that hospital communities could vary in their cultural values and system of operation. Currently, the critical question is what will be the philosophy and goals of the therapeutic community concept as it moves *beyond* the traditional hospital focus into a truly community-centered approach. Granted, the hospital is a part of the community, but it is not the *total* community per se. The therapeutic community concept needs to be extended beyond the hospital into schools, homes, industrial settings, colleges, and rehabilitative institutions.

Another urgent problem which mental health personnel need to cope with more directly and effectively in the community mental health program is the growing number of emotionally troubled college students and their "drop-in" and "drop-out" patterns in colleges. There is also a need to study college students' emotional and social adjustment problems on the campus. The cultural norms of educational institutions are changing rapidly and in some places it is difficult for the most "healthy students" to maintain their mental health. The interplay of multiple forces acting upon the college student and the faculty is an important and timely area of joint study and research by psychiatric staff and social scientists.

With the recent focus upon the poor, mental health personnel are working more directly with the poor and their mental health problems in community mental health programs than they have in the past. One of the challenges is that there is not necessarily a close or perfect correlation between mental illness and poverty. One cannot assume that mental illness, social disorganization, and poverty are perfect or even loose correlations as these variables in relation to mental health vary considerably with culture groups. Also, not all "culture of poverty" groups are angry or hostile toward the outside world because of differences in their cultural, social, and economic position. The crucial issue is whether psychiatric personnel as they work with the poor in the future will remain objective in their viewpoint and whether they will be willing to systematically study "poor cultures" in light of the people's way of life and not from the psychiatric personnel's way of life.

As the psychiatric staff gains understanding of the culture of the poor, the prestigious psychoanalytical individual and group treatment modalities may have to be drastically modified if one hopes for successful treatment of the poor. Since psychiatry has in the recent past had a pervading influence upon American people's way of thinking and acting, one wonders if they will be able to provide accurate and scientific pictures of the poor and their mental health. Social science consultants could be used in the mental health field to help psychiatric staff understand the dynamics of the poor and their way of life.

Future Oriented Psychotherapy—A Prophylactic Technique

Stanley Lesse

Western culture during the past 25 years has been characterized by accelerating change to the point that many traditional institutions must be altered if they are to survive. Whenever rapidly accelerating change occurs, it appears necessary to have some idea where the path of an individual or of a social movement is likely to end, even if the projection is only an approximation. This observation is as pertinent for psychotherapeutic or psychological processes as it is for sociopolitical, socioeconomic, or physical phenomena. Thus, in order for the psychotherapy patient to prepare for his future, it is necessary for him to have some concept of what his role may be in the world of tomorrow.

In the past our culture changed at a rate slow enough that one could reach plateaus of psychologic stability, when he could consolidate his identifications with his culture. However, currently, some episodes of psychologic stress and decompensation occur because there are no plateaus upon which the individual can consolidate his views and develop psychosocial security systems. This in turn may produce a pan-anxiety state manifest in secondary social maladaptations or psychiatric symptoms.

The concept that *rate of sociocultural change* is significant in the production of emotional decompensation may seem strange to most psychotherapists and social scientists, but it is high time that we psychotherapists and social scientists appreciate man's own particular rhythms, and that rates of change that go beyond the optimum can be damaging.

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Modern Psychotherapy—An Historical Perspective

Modern psychotherapy is about 75 years old. It has been characterized by progress in understanding psychopathologic processes and intrapsychic mechanisms pertaining to individuals and to small groups. However, concomitant economic, political, and philosophic changes have had relatively little influence on the development of theoretic formulations or psychotherapeutic techniques.

For about 40 years, psychodynamically oriented psychotherapy focused on uncovering unconscious psychologic material and working through transference relationships, implying that if these tasks were adequately accomplished, the patient would be able to function well. Time and experience have shown that the patient's working through his past does not guarantee mature functioning in his everyday life.

Beginning in the late 1930's, psychotherapy became preoccupied with ego psychology, in which strengthening the patient's ego capacities, his awareness of himself, and his relationship to his environment became fundamental therapeutic goals. During the 1930's and 1940's, various neo-Freudian groups and existentialist movements entered the psychotherapeutic scene, and hypnosis had a rebirth. More recently behavior therapy techniques have exerted an important effect.

All these theories and techniques focus on the here and now; most therapists utilizing them have been insufficiently aware of any need to help the patient anticipate and prepare for his

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own future. Yet in view of the increasing rate of change that characterizes our society, current psychotherapies are inadequate and anachronistic. To be a mature psychotherapist in this phase of our cultural development, one should be involved with preparing a patient to manage his future.

Background—My development of a future oriented psychotherapeutic technique is a logical outgrowth of a long study of the interrelationships of psychologic, sociologic, and technologic factors as they are likely to occur in future society. In a series of editorials, articles, lectures and conferences, I have attempted to point up the fact that our culture technologically, socioeconomically, politically, and philosophically, was changing at an accelerating rate of speed and that psychiatry and psychotherapy were developing in a relative vacuum, blind to the technocultural alterations exploding around us and determining our very daily existence.

As one becomes involved with the health sciences as they are likely to be in the future, one becomes increasingly preoccupied with the concept of prophylaxis. Unfortunately, psychotherapy has been limited to treatment of patients who have already decompensated; it has been sickness oriented rather than health oriented. In our future society, the focus of "health sciences" that succeed what we now call "medical sciences" will, I hope, be health oriented rather than disease oriented.

The role of the psychotherapist is likely to be altered dramatically, and prophylaxis is likely to be the psychotherapist's prime concern. Effective prophylactic measures of a psychologic nature must be concerned with the influence of economic and political institutions upon the psychologic well-being of the individual.

The prophylactic psychotherapist also will consider whether and how a given economic or political system may place one's adaptive mechanisms under stress. It is likely that all economic, political, and philosophic systems are at once compatible and incompatible in some aspects with one's ego structure. Crucial questions must be directed to determining which aspects of the systems are innately more beneficial or more stressful to the psychic existence of the individual.

All psychiatrists, psychologists, social scientists, and political scientists must in the future understand the interrelationships between sociodynamics and individual psychodynamics. This type of understanding requires a new breed of scientist which in turn necessitates a new concept of education. It anticipates that psychologic sciences and social sciences will be replaced by a new science—psychosociology. This new science will reflect the indivisible interrelationships between psychodynamics and sociodynamics in a reverberating circuit. Future psychosociologists, in their roles of advisers or executives, would be involved in the evolution of a sociopolitical system compatible with homo sapiens.

The concept of prophylaxis may take on another form. For example, active therapy in some instances will be instituted before illnesses become overt, while they are latent and possibly not obvious. This prophylactic therapy is likely to be made possible through *health science memory banks.* In the coming decades, all individuals in this country are likely to have automated medical records. Every patient's contact with a health scientist will be electronically recorded in a memory bank, and records will be available for immediate recall when-

ever the patient has a medical examination. In addition, they will be screened periodically by computers, and individuals whose records are demonstrating adverse problems will be automatically "called up" for early therapy. Consequently, most psychophysiologic, psychosocial, or physiosociologic problems are likely to be diagnosed and treated while in a subphenotypic or subliminal phase. This will necessitate different conceptualizations of psychotherapeutic theories and techniques.

Approximately 6½ years ago, for selected patients, I began to extend my psychotherapeutic procedures in an attempt to prepare patients to conceptualize, evaluate, and comprehend their roles in their anticipated future. I have labeled these techniques "*future oriented psychotherapy.*"

Future Oriented Psychotherapy

In my studies, the purpose of future oriented psychotherapy has been to prepare the patient for his world as it is likely to be in 5, 10, 20, or even 30 years from now. All psychotherapists optimally should be dedicated to the study of factors that are likely to determine our futures and to the development of methodologies for planning an optimally humanistic tomorrow.

The future oriented psychotherapist must have a general conceptualization of what the world of tomorrow is likely to be, and, in this framework, the present is viewed as a logical increment along the path toward a tentative future. This theoretic formulation is radically different from current psychotherapeutic theories in which the present, as far as the patient is concerned, is an end in itself.

Conceptualizations of the future will vary from person to person, but one point is obvious—all concepts of the future should be expressed as tentative likelihoods subject to ever changing revisions and not with an air of dogmatic certainty.

In earlier works I attempted to characterize the world of the next generation or two, focusing on three basic elements: socioeconomic and sociopolitical forces, population increase and simultaneous decrease of available space, automation and cybernation. While these are not the only forces that will determine the structure of civilization, they appear to be the most crucial. Our future society will become increasingly group oriented and more highly organized. Man will probably be inclined toward group goals. Indeed, great individual expectations are likely to be looked upon as odd, reactionary, and anti-group.

I have attempted to prepare a progressively larger number of my psychotherapy patients to anticipate and cope with the changes that are likely to occur in their lives during the next few decades. Eighty-one patients have been exposed to this radically different theoretic psychotherapeutic model and the technical procedures that are derived from this model.

General Technique

The majority of my patients are treated by psychoanalytically oriented techniques. Yet many of the patients I see are depressed or anxious and cannot function vocationally, socially, or sexually. These profoundly depressed or anxious patients are treated with psychoanalytic techniques in combination with psychotropic drugs. The main focus throughout usual treatment is in the patient's relationship to his current life, with material from the unconscious being employed in an attempt to help the patient manage his present.

Free association is encouraged, and I point out psychodynamic relation-

ships between occurrences in the patient's daily pursuits and their counterparts from his past. Prime emphasis is placed upon developing in the patient an awareness of the earliest symptoms of mounting anxiety as they apply to him in response to psychosocial stress. I repeatedly stress that the past is a function of the present and has meaning only as it aids one to cope with the present. As treatment progresses, a new concept is gradually introduced, namely, that the present should be viewed as a function or logical increment leading toward a tentative future.

Future Oriented Psychotherapeutic Technique

When the therapeutic focus is primarily present oriented, an awareness of the future is deliberately injected into the therapeutic procedure. Initially, the therapy remains a temporal blend consisting mostly of phenomena pertaining to the present, with futurologic considerations being less prominent. As therapy progresses, the past becomes less and less of a factor, while future conceptualizations become increasingly injected into the therapeutic process.

The point in therapy at which futurologic considerations are introduced depends upon such factors as the patient's age, nature and severity of decompensation, intelligence, social awareness, psychic maturity attained in therapy, ability to manage stresses, and urgency to formulate a plan for the future. Usually I have introduced the future into the psychotherapeutic scene only after patients have made progress in managing their current environment vocationally, socially, and sexually and have begun to obtain pride and pleasure from their attainments.

The challenge of the future is readily introducible, since there are innumerable phases of the patient's life that require futurologic projection. Often consideration of the future is repugnant and frightening, and in the early phase of future oriented psychotherapy some patients drift to another subject. The therapist may need to call the patients' attention to their reluctance to consider what may appear as a confusing, structureless unknown.

It is usually necessary to offer the patient a general frame of reference in order that he might see himself in terms of a future that has certain structures and parameters. I often present various theoretic constructs that have been employed by different futurologic researchers.

My concepts of the future are never presented with dogmatic certainty, but as tentative probings; the patient is encouraged to develop his own ideas with regard to possible futures. Having done so, the patient is encouraged to project himself into the world that he has conceptualized. The therapist must be prepared to guide the patient with pertinent questions and observations.

At this point in therapy, the here and now is seen as a steppingstone toward the future, and realization develops that what one does now determines in great measure one's future preogatives. The patient is encouraged to consider the various vocational, social, or even sexual possibilities that are likely to be available to him in the foreseeable future; then he formulates a flexible plan for approaching these tentative futures.

The patient is also encouraged to contemplate stresses or supports that are likely to be encountered in reduction of working hours, leisure, restric-

tions and benefits of groupism, sociopolitical change, cybernated systems, and so forth.

Varying problems that pertain to professional or vocational phenomena must be considered if a patient is to be able to plan for his or her future. A few examples illustrate partially the scope of issues which I have confronted: I have treated a few patients who projected that their industries would not exist fifteen years hence. Other patients, small or medium entrepreneurs, focused upon questions of whether they could compete effectively in fields likely to be dominated by large corporations. Still others investigated possibilities for modifying services or products in anticipation of changed public demands, new techniques, automation and cybernation, and the like. Some who worked for large corporations became aware of problems related to future promotions, phasing in and phasing out of jobs due to automation, or the advisability or necessity for additional training in anticipation of future trends. In all instances patients were guided so that they reappraised their assets and liabilities in terms of a foreseeable tomorrow.

Several intelligent, ambitious young women holding junior executive positions were encouraged to evaluate their professional potentialities in terms of lessening prejudices against women, their long-range anticipations about relationships they expect to have with men, their concept of future marriage, and the like. With some young married women the challenge of the future is introduced in terms of what their world is likely to be when their children are growing up or after their children have left home.

I have found it relatively easy to arouse futurologic interests in young parents, since so many are concerned with the nature of problems which are likely to confront them as their children approach adolescence and adulthood. They are encouraged to visualize future demands and needs of their children in the world as it is likely to be, then to determine how they should prepare their children for their particular tomorrows.

Future oriented psychotherapy has broad significance in the treatment of adolescent patients, for the world of the adolescent in just 5 years is likely to be vastly different from that experienced today. The adolescent patient and the therapist become working partners in conceptualizing the patient's probable future society. As patients learn to view the present as an increment or function of the future, they become soberly cognizant that they are responsible for their tomorrows.

These are but a few of the projected psychosocial problems that I have encountered during the future oriented phase of psychotherapy. Future oriented psychotherapy is in its infancy, but it appears to have significant promise as a prophylactic procedure. As such, it seems to be one of the paths of development of psychotherapeutic techniques that would be optimally applicable at the dawn of the new millenium.

Can Man Shape His Future?

PHILIP HANDLER

The pace of scientific and technological achievement has so dramatically changed man's capabilities and has brought so many surprises that any projected vision of the future will be less dramatic than reality.

The world's population will have stabilized, although at what level is uncertain. The racial balance will be different. Caucasians made up 20 percent of the world's population in the seventeenth century; they now represent about 40 percent. But the trend has reversed, and the more heavily pigmented populations are increasing disproportionately. These gene pools will undergo more mixing but with what results one cannot say.

The bulk of humanity will be gathered in megalopolises, in huge buildings surrounded by parks, perhaps covered by domes within which the atmosphere will be maintained rather constant. Outside the fields will be verdant, lakes and streams clear.

Power consumption will be vastly greater than in the United States today. The price per kilowatt will have been reduced by thermonuclear plants capable of 1,000,000 Mw output, or more. Water will be abundant, thanks to desalination made possible by cheap power; thermal pollution will have been replaced by a variety of uses of the heated effluents of these power plants, such as desalination, domestic heating, and year-round agriculture.

Each individual will have a pocket two-way television instrument and immediate access to a computer serving as his news source, privately programed educational medium, memory, and personal communicator with his bank, broker, government agents, and shopping services.

The bulk of the labor force will engage in activities currently classified as services rather than production of goods. Principal pursuits of mankind will be cultural, recreational, or devoted to the expansion of knowledge and understanding.

Most diseases will be matters of historic interest only, and each individual may look forward to about four-score years of healthy pain-free life before succumbing to old age.

If humanity survives to see such a world, national aspirations will have been sublimated to some form of world order; a worldwide police force will maintain law and order, and the arsenal of nuclear weapons, ballistic missiles, and diverse countervailing measures will have been dismantled.

Most of us hold such a dream in common, differing only in detail and in the color of our imaginations. My thesis is that science has provided the basis in understanding necessary to fashion many elements of the dream, and it will be fulfilled if mankind can survive the crises of this century.

Foremost is the need to secure a stable world peace, and I regret that so few of the technical community are addressing themselves to this problem. But my subject is really the second problem—which can be teased apart into the fragments identified as population, food supply, environmental quality, and resource utilization—but is really one major problem.

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Opponents of population control argue that given the time and effort required to increase agricultural productivity sufficiently, Earth can sustain a population vastly larger than that at present in nutritional abundance. Undoubtedly this is the case. But with what consequences?

Surely the fact that it might be possible to feed huge populations does not justify uncontrolled population growth. The most cogent argument for population control is that if world population will approximately double by the turn of the century, and if it were possible to raise the standard of living for all to a standard comparable with that of the average American citizen of today, the drain on the world supply of natural resources would be seventy times that in 1950, and the drain on the biosphere would be about six to eight times that of today. Our planet could not tolerate a continuing insult of that magnitude.

Whatever the biologically maximum possible population might be, it is much larger than at present, very much larger than that which most of us might consider to be optimal. Even a 1 percent growth rate will soon be unacceptable, else all mankind must accept living standards inferior to those some of us know. Even our present numbers suffice to populate the planet with the diversified human talent required to contribute to progress on all human fronts—science, the arts, industry, government, etc. Many of the most tragic ills of human existence find their origin in population growth. Hunger, pollution, crime, despoliation of the natural beauty of the planet, extermination of countless species of plants and animals, overlarge, dirty, overcrowded cities with their paradoxical loneliness, continual erosion of limited natural resources, and the seething unrest which engenders the political instability leading to international conflict and wars—all derive from the unbridled growth of human populations. If humanity is to realize its potential, if life in the future is to be worth living, population growth must be checked.

Granted that several Western nations have stabilized their populations by a variety of means, nothing could so much advance this cause as a reliable, reversible, safe, very cheap contraceptive device or procedure, preferably such that error or carelessness would result in failure of conception, rather than the reverse. No such procedure is presently available, and this major challenge to students of reproductive physiology is being explored vigorously.

Problems of the environment and natural resources differ in the developed and developing nations. Although population growth is faster in the latter, the immediate penalty is far greater in the former. As compared with a native of the Amazon jungles, we make enormously greater impact on the environment and on our resources. The difficulty in merely sustaining the life of a Brazilian native may loom large, but it has little impact on the reserves of coal, oil, iron ore, copper ore, or phosphate rock, and it contributes little to the despoliation of the environment.

Hence, there is a growing sense of urgency that, in advanced nations, population growth be minimized and economic growth be slowed while we develop a coherent quantitative model of our national life, develop a commensurate national population policy, and effect social action programs to assure that all enjoy the full advantages of citizenship.

The magnitude of contributions from the "have" to the "have not" nations is of great moment. For the

latter, enhanced agricultural productivity is the chief hope for the accumulation of capital required to pay the costs of entry into technological civilization. Yet, it is in those countries where the problems of food shortages may become acute. If they are to escape that crisis, they can do so only by importation of capital from the developed world. The burden lies with the developed world, and our decisions will determine the future of the masses of humanity in the developing "third world."

As that development succeeds, the per capita drain on resources must rise, defeating the very purposes of development—enrichment of the quality of life. If the goal is to have all humanity share the current American standard of living, the planet cannot tolerate successful development. Therefore, the acute need for worldwide population control—now. Large-scale assistance to developing nations will have, at first, the effect of a brake on economic growth in the advanced nations, itself a desirable goal. Other, more painful, consequences must be recognized: As the gap in education and life-style between the now-developed and less-developed worlds becomes smaller, the greater will be the resentment of the remaining differential, as we have seen within our own borders. In this sense, assistance could be planting the seeds of conflict, a dilemma whose resolution is not apparent, yetm ust not be a deterrent on purely humanitarian grounds. In any case, for the moment that isn't the problem. The gap between us is widening rather than closing.

All nations must concern themselves with preserving and protecting their environments and resources. It is imperative that we recognize how little we know and how badly we require scientific understanding of the nature and magnitude of our environmental difficulties.

The wave of public concern has been aroused in large measure by scientists who have occasionally exaggerated the all-too-genuine deterioration of the environment or have overenthusiastically made demands which, unnecessarily, exceed realistically realizable expectations. While we must be grateful to them, it is through their efforts that science is thought by some to have contributed to the deterioration of the quality of life; science is equated with technology, and both are judged to be immoral. The manner of directing attention to these problems has turned much of the general public, many decision makers, and a yet larger fraction of our youth, against science. The nations of the world may pay a dreadful price for the public behavior of scientists who depart from established fact to indulge in hyperbole.

Alarmed voices advocate retreat from our technological civilization—as if life had been better in some bygone age when our ancestors lived closer to nature than do we. I prefer that we attempt to manage our technological civilization more successfully, remedying the errors of the past, building the glorious world that only science-based technology can make possible.

The profundity and widespread concern of the moment is surprising —perhaps this shows our great frustration in not having found successful approaches to more vexing social and international political questions and reflects the relief of addressing concerns which most can share. Should that be the case, it would be well to take maximal advantage of the opportunity, for it will surely pass as public concern. The public and its political representatives eventually will begin to take environmental deterioration as

much for granted as they now do the presence of an arsenal of nuclear weapons.

However, I cannot share the facile criticism of industry and government as a history of unconscionable misdeeds. The course of history could scarcely have been otherwise. How unlikely is a scenario in which concern for quality of the environment would have begun concomitant with the origins of the industrial revolution, when the esthetic and hygienic state of every major city was far less acceptable than is that of any city of the moment. It is in the nature of homeostatic systems to overshoot, to register the resultant aberration and make appropriate corrections. Man and his societies are no exception. Rather than condemnation of the past, be grateful that the environmental movement is now sufficiently strong to provide opportunity to chart a new course for the future while there is time.

We in the Western world find it ironic that the planned societies of Eastern Europe have followed the same disastrous course and must confront the same problems we have. What is even sadder is the prospect that, in their eagerness to attain the life-style of the advanced nations, developing nations may injure their environments and deplete their resources more rapidly than did we. Public officials who seek to implement programs of environmental protection in those nations will have to look to generations yet to come for approbation. In all likelihood, their contemporaries will be impatient and indignant.

Man's place on Earth is unique. For the first time, decisions knowingly made by one species determine the number and variety of all other species; that places upon us an awesome responsibility. To be sure, natural cataclysms and the workings of evolution have resulted in the extinction of 95 percent of all species which have ever appeared on Earth. But we can determine history hereafter. In managing Earth's limited resources, it will be tragic if we neglect this responsibility and permit passing cupidity irreversibly to destroy the remarkable diversity of life.

While there is yet time, national and international organizations and governments must compel measures to assure survival of terrestrial and marine wildlife and to guarantee that there be wilderness for solitary men to bathe in the grandeur of nature.

This may be "the hinge of history" when man's future may be decided. There is urgent need for an international organization adequate to solve problems of population control, environmental quality, resource conservation, and the quality of life. These tasks cannot be left to the capricious judgments of individual national governments.

This international organization must, on rational scientific grounds, establish worldwide standards of acceptable quality for water, air, and foodstuffs and must recommend international population policy. It must determine what worldwide level of extractive industry and manufacturing is compatible with those standards and population so that a steady state may be achieved with nature, with the environment, and with utilization of renewable and nonrenewable natural resources. Achievement of this goal will yet require a substantial research and development effort. This does not gainsay the need for national efforts; quite the contrary, it is the latter which must be suggested in part and monitored by the international organization. The nature of this organization I leave to those more politically so-

phisticated than I. And there is little time to lose.

The relatively recent internal history of the United States may help to illuminate diverse aspects of these problems. Until now, life in the United States was governed by the operation of the market economy; today all major decisions must be made in the public sector—but we have little competence in this art.

Only this year has the government organized for effective action in protecting the environment. But we still lack national policy with respect to conservation of resources, and we are timid in our approach to the population problem. We boast of our agricultural productivity but rarely give credit to the remarkable continuing research and development effort achieved by U.S. Department of Agriculture laboratories, State university agricultural schools, and industrial plant breeders, then nurtured by a giant "agri-business" and translated by a battalion of county farm agents.

Science and technology underpin our economy, our security, our public health, and our food supply—but we lack a definitive science policy, and our science effort is threatened by lack of public support. Graduate and professional advanced education are sustained by Federal funds—but neither Congress nor the Executive branch has formally acknowledged Federal responsibility for these endeavors. We have a Public Health Service—but we have yet to establish Federal responsibility for the public health.

Only recently have we embarked upon a managed economy in the sense that Federal fiscal policy sets the environment for all economic decisions. In recent years, government has accepted the insurance function against such social hazards as unemployment, severe medical costs, or inadequate financial resources in old age. Soon the government will serve as the employer of last resort, assuring a guaranteed minimal income for all. Perhaps uniquely among the nations of the world we have defined—in dollars per year—what we mean by "poverty," although the level would be regarded as affluence among many peoples. Abolition of poverty is a national goal which we can achieve whenever we choose.

There is insufficient recognition that the science-based technology responsible for the material well-being which has engendered these changes is responsible for the New Enlightenment itself. Our seemingly new-found concern for the welfare of our fellow man is occasioned by the wealth born of technology which will not permit our consciences to ignore long-standing disparities. The illiterate and uneducated, once an asset as a pool of unskilled labor, are no longer needed, hence must be educated to responsible, rewarding roles in our society.

Although individual or corporate activity can contribute much to the solution of environmental, agricultural, or health problems, only action at the Federal level can be effective if acceptable goals are to be achieved on a reasonable time scale.

Each of these situations finds analogy among other nations as well as for the community of nations as a whole, albeit perhaps not on the same time scale. Accordingly, as we have noted, the challenge is to fashion an imaginative, universally acceptable international instrumentality which can utilize the best scientific and technological capabilities in the worldwide interest of man. This agency must be as temperate and conservative as it is determined and must understand that the terms "pure air," "pure water," or "pure food" are without meaning, as

is "safe" when applied to drugs or food additives. Each requires a quantitative definition with respect to specific components and, usually, one that will entail a trade-off.

What are the trade-offs? One asks that the benefits to life of a lifesaving drug considerably exceed its hazards. If it be a food additive which is toxic only in very large excess, but not in amounts commensurate with nutritional requirements, I see no objection to fortification of foods even though the amount added exceeds that in native, unprocessed foodstuff. There is nothing sacrosanct in natural foods; their composition reflects not nature's design for human nutrition, but rather the chemical mixture appropriate to the functioning or propagation of the species of plants and animals which are our foods. If fortification with synthetic amino acids or vitamins is the cheapest way to assure adequate nutrition, it is folly to stand in the way.

We should embark upon an extremely large effort to obtain definitive scientific information on nutritive values and toxic risks of all known food additives, and we must make the information available to consumers as rapidly and efficiently as possible. International cooperation would build useful bridges among nations while reducing the costs and shortening the time to obtain the information. Whether that should be a function of the new international agency or an arm of the United Nations is of small moment; what matters is that we get on with the task. Until such time, let us behave rationally rather than "run scared" as we have done with cyclamates and DDT.

The emotional worldwide awakening to the undesirable side effects of some facets of technological civilization has led to diminution in support of scientific endeavor. Whether this derives from know-nothing anti-intellectualism, informed repugnance, or ignorance, the effect is the same—demands for a moratorium in the pace of the scientific endeavor. I could not disagree more violently. The technology science makes possible is the principal tool this civilization has fashioned to alleviate the condition of man. If life is to be better, we shall require more and better science-based technology. If we retreat from research today, if we fail to educate a large, diversified corps of scientists, we shall fail to construct a platform for the technology of tomorrow, and our great-grandchildren will not thank us.

The scientific and technical communities have failed to convey the nature of their endeavors, their successes, failures, and problems, to the public. For most citizens, science is equated with "big science," the science of radio telescopes and large accelerators, the science that gives us colored television, the engineering that put a man on the moon. But there is not equivalent public understanding of the "small science" that gives us an abundance of natural and synthetic fibers, that has made modern agriculture nothing short of miraculous, that accounts for the myriad, nutritious, and convenient products in every supermarket.

In general, the public is better informed with respect to medical research. Yet here, too, misunderstanding and incomprehension are the norm. Publicity is given to "breakthroughs" when these are but the visible tips of the research iceberg. The public, Congressmen, and even some medical practitioners demand that medical schools devote themselves to the production of "ordinary practicing doctors" at the expense of research activity, meanwhile demanding that such activity be more directly ad-

dressed to important problems of disease rather than exploring the nature of life, demanding that limited Federal resources be diverted from support of research to the delivery of health services. They could not be more wrong.

What is really meant by "medical care" is the mobilization of resources of manpower and facilities to bring to bear inadequate halfway technologies. When research provides a basis for truly definitive prevention or therapy, the resultant control of a disease is enormously simpler and cheaper than the palliative halfway technologies which were utilized before.

Each time this sort of advance has occurred, it has been the consequence of insight into underlying disease mechanisms provided by basic research. Consider a few such diseases, each of which was once a major drain upon the health care system: infectious diseases such as tuberculosis, typhoid fever, poliomyelitis, cholera, syphilis, rubella, diphtheria, smallpox, and tetanus; nutritional diseases such as pellagra, rickets, scurvy, and pernicious anemia; or Addison's disease, hyperthyroidism, goiter, glaucoma, and erythroblastosis fetalis. Today their control or prevention is relatively simple and cheap, and these diseases pose few problems of logistics, manpower, and costs for the health care system.

In contrast stand those partially understood diseases which can be mitigated only by major efforts, but for which we lack definitive cures or preventive measures. These demand the most complex technologies research has made available, technologies which constitute only palliative or physiologically corrective measures. These disorders engender large human and financial cost and frustrate the health care system, not because of shortage of professional manpower or of hospital facilities, but because there is so little truly effective medical technology available even in the best of circumstances. This is true for most forms of cancer, stroke, coronary thrombosis, myocardial infarction, hepatic cirrhosis, glomerulonephritis, pyelonephritis, rheumatoid arthritis, osteoarthritis, acute rheumatic fever, disseminated lupus, bronchial asthma, multiple sclerosis, the senile psychoses, schizophrenia, mental retardation, emphysema, most genetic disorders of metabolism, muscular dystrophy, cystic fibrosis, and the virus disorders which are not preventable by early immunization.

There are promising avenues of research with respect to these disorders. Elimination of the major lethal and incapacitating diseases which now afflict mankind is not a hopeless dream but a ·ational projection into the future based on the capabilities of the present. But, if this nation foreswears research progress, it must plan for at least 50 percent more hospitals, more doctors, more nurses, more sanitariums, and more suffering by the turn of the century.

Is *Homo sapiens* as we know him, the end of biological evolution? Is man, the first product of evolution capable of controlling his own evolution, to put an end to that evolution? Are we another evolutionary blind alley? Perhaps.

By outwitting the forces of nature, man's numbers have burgeoned. By controlling his environment he has circumvented the driving force of natural selection which guided evolution in the past. By finding euphenic solutions to genetic disease we have contributed to the deterioration of our own genetic stock. If that is all we do

with our understanding, then evolution will not only have halted but retrogressed. Yet this need not be so.

Experimentation with the genetic possibilities of mankind seems repugnant, but the time will come when man's curiosity will stir him to explore the full potential of his own genes. Whether this takes the form of breeding by selection of biological mates or selective utilization of artificial insemination, by making replicate copies of admirable individuals, or creation of mutants remains to be seen. But experimental manipulation of the human germ plasm in a deliberate attempt to create a strain of humans selected for some attribute must be reserved to a remote future when man is more certain of himself and his values. In the interim, random mating is but a relatively small sampling of the immense variety inherent in the human gene pool and creates a sufficiently intriguing human diversity.

Science *is* capable of fulfillment of our dream. If the dream fails, it will be because of the limitations of man the social creature. There is no question whether man can live with his technology. The question is whether man can learn to live with himself. Just as ecology is too immature to cope with our environmental problems, the social sciences are too young to cope with our pressing national and international problems: terminating the war in southeast Asia; establishing a stable permanent peace; learning to deal with political terrorism and the challenge to the legitimacy of government; achieving a successful progressive modus vivendi in our racial problems; coping with violence and crime; reconstruction and management of large cities; curbing the drug culture; developing an adequate system for the delivery of health care; abolishing poverty, illiteracy, and ignorance, in addition to problems we have already discussed.

It is not obvious that we have the understanding or the social and political institutions to deal with these challenges—but seek them we must. Meanwhile, the struggle of man from his animal origins affords cause for hope. In view of the contributions of science to society, we scientists are shocked to find science under attack —yet this is nothing new. Many are humiliated by lack of understanding of science and its tools, or hold science accountable for abuses of power, finding us guilty of destruction of the environment and of generating the population problem by preserving life. Yet, surely, no other course is open to us but to utilize our growing understanding in the service of man.

New Concepts in Educating the Emotionally Disturbed Retarded Child

LAWRENCE H. WEINER

The education of educable retarded-emotionally disturbed children has become a challenging problem to the public school in recent years. Emphasis has been away from residential placement or other means of moving this child out of the neighborhood school. The recent goal has been directed toward a daily program within the public school.

Thus, school departments are concerned with the education and treatment of children who are handicapped by retardation and emotional problems to such a degree that normal educative processes are complicated by problems affecting performance in the classroom, learning efficiency, and school adjustment.

The particular emotional disorder under consideration is seldom the same for any two children, but the symptoms are very much alike. Such children are often characterized by: over-aggression or psychological withdrawal; immature language development with regressive aspects such as echolalia; poor relationship with other children in the classroom; lack of initiative in active participation in the classroom; and frequent exhibitions of mannerisms such as rocking, random finger movements, peculiar vocal noises, and distractibility.

The most frequent exhibition of emotional disturbance occurs when it is important for the child to avoid the realities of daily living and the orderly procedures of the school day. The child uses his emotional problems as a wedge between himself and the environment, allowing him to escape pressures by such means as aggression, withdrawal, lack of interest, avoidance behavior, and failure to respond. The continued avoidance of environmental demands leads toward a reliance on inner stimulation which can become so inner-directed that the child no longer wishes to function within the larger environment.

With this behavior syndrome firmly entrenched, the child is placed in a public school program, leaving the teacher with the dilemma of how to stimulate or break through the barrier while the child capitalizes on this pseudodisturbance. Present psychological theory and practice advocate the maintenance of a warm, permissive, accepting atmosphere which will encourage the child to meet demands because of similar feelings he develops in this atmosphere. This is a feat not easily accomplished in the public school classroom, and the child often learns to take full advantage of the accepting atmosphere and remains in this comfortable habit pattern with no change or progress. Placement in a special class for emotionally disturbed also reinforces disturbed behavior by its nature of permissiveness and acceptance. Hence one arrives at the dilemma of how to adhere to current psychological practices and at the same time achieve educational goals necessary for the child's development and sense of accomplishment.

It is proposed that this dilemma may be diminished by an attitudinal set of the teacher. The teacher should discriminately enforce the realities of classroom social and educational behavior. This process makes the child

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aware of expectations, leads him to these expectations, and allows no retreat from those deemed imperative for life adjustment. Discretion and selection by the teacher as to which of the daily demands are to be enforced is also necessary.

To accomplish this process, one must first accept that meeting the expectations of the school, the teacher, and the environment are of prime importance. Secondly, one must accept that regardless of the nature of the disturbance, the child desires human association and contact and will react to attention he receives, be it positive or negative.

Two concepts are essential to the formulation of a program for the disturbed retarded child—"reconstructed reality" and "reinforced reality." The former is the first step in the process of adjustment. The teacher is concerned with reforming, clarifying, and redefining the interpretation of the environment by the child. A day-to-day relationship is developed in which the teacher assumes a role of stabilization and consistency which frequently is lacking in these children's lives. The purpose of reconstructed reality is to revamp the child's intake process concerning social behavior and to retool his output of social behavior.

To coordinate this process, the concept of reinforced reality is utilized. The teacher insures that appropriate behavior is retained and inappropriate responses are eliminated. A system of reinforcement for acceptable behavior must be devised. This system depends on knowledge of the child and the relationship that develops during the reconstruction of reality. A commonsense approach, it requires interpersonal involvement of the teacher with the class. Combining the aspect of reconstructed reality and reinforced reality establishes a baseline of consistent environmental action and reaction. The teacher assumes the role of mediator, interpreter, and judge in a concentrated sequence of time. Emphasis is on the continued and concentrated aspects of the program to bring about more rapid change in the child's behavior and to clear away problems of response patterns which interfere with learning. Learning will not take place when disturbed behavior is present.

Techniques that will help in the realization of these two concepts can be seen in several steps: (1) The child should be informed of the rules of the classroom. He must know them, understand them, and also understand the consequences of failing to abide by them. (2) A strong, daily routine of classroom functioning should be established. Definite time limits for areas of work should be created and adhered to implicitly. (3) Definite behavioral limitations should be placed on each activity, with praise and punishment used as deserved. (4) The child must know that participation in daily activities is a required task and not to be done at his own volition. (5) Opportunity for free play and free expression should occur at a definite time and place in the school day.

The purpose of these five steps is twofold: to provide an understandable environment for the educable emotionally disturbed child through stressing reasonable limits and boundaries under which the child can operate effectively, safely, and securely; and to provide an atmosphere in which educational goals can be met.

These goals can be attained with this program when the steps are exercised with patience, fairness, and flexibility.

Protecting the Public's Privacy in Computerized Health and Welfare Information Systems

JOHN H. NOBLE, JR.

As existing health and welfare information systems are computerized, social work and health professionals must face a number of ethical, legal, and pragmatic issues regarding privacy and confidentiality.

How secure are computers as repositories of information? In 1966 testimony before the U.S. House of Representatives Special Subcommittee on Invasion of Privacy cautioned against hasty development of a national data bank on the grounds that inherent weaknesses in both our computer and communications systems left them "wide open to tampering by anyone sufficiently intelligent and motivated enough to take advantage of their weak spots." Several types of controls have been proposed to insure privacy: threat monitoring, privacy transformations, access management. Some hardware counter-measures, such as physical keys which record the key number on a file or output device, have also been suggested. No systems have been built which enable us to evaluate the costs of these methods, and the proposed tehniques have seldom been implemented.

Although security in any absolute sense is unattainable, the costs of safeguarding computerized information somehow must be balanced against the probability of loss. The full extent of traffic in ill-gotten information is neither known nor easily ascertainable. Persons trafficking in derogatory information are not likely to volunteer which information they seek most avidly. Similarly, most people do not realize when their privacy has been invaded—or the source of invasion. These subterranean phenomena make any security cost-benefits analysis extremely difficult.

The computer, like any other tool, is neutral. Responsibility for pursuing beneficial or destructive goals belongs to the men and organizations who exploit the computer's high-speed capacity for storage, retrieval, and analysis of vast quantities of information. The motives of political executives, the ingenuity of managers, and the carelessness of technicians are what endanger privacy. The task becomes one of reforming human information systems, regardless of supportive technologies.

Confidentiality—the implicit or explicit agreement between a professional and his client to maintain the private nature of their communications—is the basic component of the client-professional relationship. Loss of confidentiality would destroy the very relationship on which professionals rely to render effective service. For this reason social work and health professionals have jealously guarded information obtained from relationships with clients.

Social work and health professionals should be most circumspect in reviewing proposals for computerizing portions of existing information systems, because their interests in protecting confidentiality may be vitally affected. Computerized health and welfare information systems must give clear indications that both the client's right to restrict information about himself (privacy) and the professional's obligation to do so (confidentiality) are being respected.

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In the abstract, safeguarding confidentiality appears simple. Anything the social work or health professional learns from the client is confidential, and nothing is disclosed without the client's consent. In practice, relatively complex sets of rules govern who gains access to what kinds of information about clients, in what form, and under what circumstances. These rules are largely unwritten and, more often than not, discretionary. Adherence to the rules is not always perfect, and differences of opinion exist among professionals. Under special circumstances the client's right to his confidences may be abridged justifiably when certain types of conflict arise between confidentiality and other rights of the client, rights of other individuals, rights of the community, or rights of the professional himself.

Social work and health professionals and their clients must control how confidences will be used. To do so, they need guidelines by which to judge proposals for computerizing existing information systems, and such guidelines must focus on two basic types of information system: anonymous statistical systems and intelligence or dossier systems.

Anonymous statistical information systems do not threaten privacy or confidentiality. They contain data on individuals either in the aggregate or as records identified by numbering systems that are unique to each agency or organizational unit supplying them. The key to the identity of individuals resides in each agency or organizational unit. Judicious recruitment and selection policies, adherence to professional codes of ethics, in-service training, and careful supervision should provide sufficient protection.

Intelligence or dossier information systems, because they contain data that directly identify individuals or families, present greater risks. Most legal authorities agree that free and informed client consent is the safest method of preventing invasions of privacy in dossier-type systems, provided that safeguards are maintained against unauthorized access. Free and informed consent, however, would tend to limit the scope and usefulness of a system insofar as clients disagreed with its purpose and withheld consent. Problems also arise when data collected for one purpose are used for another. Accordingly, proposals to waive the client's right to limit circulation of information about himself have been set forth to facilitate development of national, state, or community-wide information systems.

In view of the dossier-type system's vulnerability to abuse, the anxiety of citizens about privacy in the computer age, and the sensitivity of the client-professional relationship to real or imagined breaches of confidence, the social work and health professions are justified in taking a conservative stance toward information systems containing identifying data on clients —especially if waiver of free and informed consent is the necessary condition for their development.

Social work and health professionals and their clients have a common stake in limiting their participation in information systems to those that contain anonymous statistical data. However, neither group can escape the impact on their lives of dossier-type systems that are used increasingly in other sectors of the community. Therefore, it will be necessary to lobby for legislation to regulate all computerized data banks, regardless of their sponsorship or use.

The Windigo Psychosis: Psychodynamic, Cultural, and Social Factors in Aberrant Behavior

THOMAS H. HAY

The windigo psychosis has been regarded as a disorder specific to the people of the Northern tribes of Algonkian-speaking Indians. This disorder is marked by the desire to eat human flesh—something ordinarily repugnant and horrifying to these people—but a desire which was gratified by more than half of the individuals whose cases have been reported. The feature of windigo sickness which is peculiar to the Northern Algonkian-speakers is unritualized, socially uncontrolled cannibalism among people of a society in which cannibalism is strongly tabooed and regarded with horror.

The existence of ritual cannibalism in many societies of Australia, Oceania, Africa, South America, and in North America outside of the eastern sub-arctic area testifies to the commonness of the desire to eat human flesh and to the possibility that the cannibal impulse can be gratified by people who are not obviously psychotic. Among some Europeans and Americans diagnosed as suffering from depressive or schizophrenic disorders, the desire to eat human flesh is verbalized without any cannibalism occurring. Some Indians afflicted with the windigo psychosis have also verbalized the desire to eat human flesh without becoming cannibals. These facts suggest that cannibalistic impulses may result in psychotic cannibalism, in psychosis without cannibalism, or in ritualized cannibalism without apparent psychosis, depending on the cultural and social conditions which surround the person whose cannibalistic tendencies have been intensified by some stress.

The windigo disorder is an aberration of the typical personality of the Northern Algonkian-speakers. Since the people of the different groups of Northern Algonkian-speakers are essentially similar in typical personality, I have treated conclusions based on thorough study of the Ojibwa group as applicable to the people of all of the Northern Algonkian-speaking groups. The personality typical of these people is characterized by emotional restraint, expecially restraint of aggression, by a tendency to hostility which underlies the restraint, and by dependency and other "oral" characteristics.

Symptoms of the windigo psychosis include melancholia, anorexia, insomnia, and hallucinations—all symptoms of depressive disorders—and the desire to eat human flesh which is common in psychotic depression.

Psychodynamics of the Desire to Eat Human Flesh

It is assumed that people who develop cannibalistic desires believe unconsciously that eating people is a means of magical efficiency for solving problems of interpersonal relations or for acquiring supernatural powers. In psychoanalytic terminology, these people are *oral characters*. It is also assumed that people who develop cannibal desires lack genuinely effective means for solving their problems or do not believe that the available behavior will be effective.

People who want to eat human

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flesh are generally pursuing one of three outcomes. These three outcomes are: "preserving" a relationship with some loved one who has been "lost," "solving" ambivalent feelings toward someone, or acquiring some property such as vitality or courage. Pursuit of one of these outcomes, often in combination with other outcomes such as nourishment, seems to be involved in the windigo disorder, in depression and schizophrenia in other societies, and ritualized cannibalism.

It seems likely that the desire to retain a relationship with someone who is emotionally close is always present, but that it leads to cannibalistic desires only when the relationship is threatened and when ordinary means to maintaining it are unavailable or believed to be ineffective.

According to some psychoanalysts, many people in Euro-American society symbolically eat the deceased loved one in dreams or other fantasy. In the people of many societies, cannibalistic impulses arise and are ritually gratified when a loved one dies. Ritual consumption of the body of the deceased by his nearest relatives occurs in Australia, New Guinea, and the Pacific, and is relatively frequent among South American Indians. Participation in such socially controlled, ritual cannibalism is not generally regarded as evidence of psychopathology. The belief in the efficacy of cannibalism for restoring a relationship with the dead in Western Civilization is evidenced by symbolic cannibalism in the Communion ritual of the various Christian churches.

In three reported windigo cases uncontrolled cannibalism of the windigo disorder began with eating the body of a loved one who died. In all three cases, the choice of cannibalism was determined by its realistic efficiency for nutrition as much as by the desire to retain the loved one. Lest this cannibalism be regarded as only a rational response to extreme hunger, it should be noted that two of these three windigoes apparently went on a cannibalistic binge, eating more people than were necessary for survival. There is, however, one case where the cannibal apparently ate his brother "rationally" and then stopped.

The outcome "solving ambivalent feelings toward another" can better be regarded as a combination of two outcomes. These two outcomes are the outcome previously discussed—"preserving a relationship"—and the outcome of "stopping the frustrations that the other imposes." Killing and eating the other is seen by the cannibalistic individual as a means to achieving these outcomes jointly.

The desire to acquire some characteristic of the person eaten is a motive for cannibalism frequently expressed by cannibalistic peoples throughout the world, and three cases of windigo disorder seem to involve the motive of acquiring powers from the person eaten. All three involved middle-aged or older people who expressed a desire to eat "the children." It seems possible that, as their own vitality began to decline, these older people wished to acquire youth and vigor from the children. None of the three people with whom we are concerned here actually became a cannibal. All of them expressed a wish to die; one was assisted in committing suicide by hanging herself, and the other two were killed by members of their bands.

The same psychodynamic factors produce heightened cannibalistic impulses in people of many societies; therefore, the windigo disorder cannot be explained as the consequence of personality factors peculiar to the groups among which the disorder occurs.

Cultural Factors in Windigo Behavior

There are two cultural features unique to the Northern Algonkians which appear to be of significance in producing windigo behavior. The first of these is the extraordinary importance attached to following one's dreams without consulting others. The second feature is the absence of alternative patterns for displacing cannibal desires from members of the band or for expressing them symbolically.

The Northern Algonkian-speaking tribes have institutionalized, to a greater extent than other Indian groups, obedience of the individual to the promptings of supernaturals who appear to him in dreams; that is, to the promptings of his own unconscious desires. It is socially acceptable to disown the impulses by attributing them to supernaturals sent by a sorcerer. In this case, the individual may feel that he is controlled from outside and that he lacks the option of disobeying the commands and being punished. For the Northern Algonkians, then, this institutionalization of obedience to unconscious promptings tended to insure that individuals with strong unconscious desires to eat human flesh would be likely to yield to these desires. The fact that dreams were not to be revealed to others further removed such unconsciously motivated behavior from social control.

For the Northern Algonkians, there were no institutionalized patterns for directing the cannibal impulses toward outsiders. The only fully institutionalized way for the individual experiencing cannibal desires to ask others to help him control them was to ask to be killed, and the only cannibalism with which they had any acquaintance was the uncontrolled cannibalism of the windigo. This undoubtedly served to direct the thinking of those having cannibal desires into the windigo pattern—a pattern which probably follows the "natural" impulses of man, at least so far as the initial act is concerned.

The Northern Algonkians did have available one institutionalized pattern for trying to "cure" the individual of his cannibal desires once these had become acute—treatment by a shaman. In five recorded attempts by the Indians to treat the disorder three efforts were successful. In all three cases, the successful practitioners were women with close attachments to the patient —mother, wife, grandmother.

The Northern Algonkians also have a more frequently employed pattern of "controlling" the individual's cannibalistic proclivities—in 15 of the 26 cases of windigo disorder, the "patient" was killed before he made any attempt to eat anyone. One individual committed suicide to prevent herself from carrying out her impulses, and 5 of the 15 who were killed are reported to have asked to be killed to prevent their eating anyone.

In summary, the Northern Algonkians emphasize to a very high degree the importance to an individual of following the promptings of his own unconscious and provide no customary pattern for bringing the individual's response to these inner promptings under social control. Further, the culture of the Northern Algonkians offers no pattern except windigo behavior for satisfying desires to eat human flesh. Consequently, when a member of a Northern Algonkian group begins to experience cannibalistic impulses, he sometimes develops depressive symptoms and is killed, or occasionally he is cured, but most often he becomes a windigo cannibal.

Social Factors Involved in Windigo Behavior

Factors associated with the particu-

lar group in which the incipient windigo lives appear to determine whether the individual is cured, is killed before becoming a cannibal, or actually begins to eat human flesh. The social factor which appears to be crucially important is the degree of control over their own impulses possessed by those most closely associated with the incipient windigo. The control possessed by the close associates determines the nature of the interaction between them and the incipient windigo which, in turn, determines the course of development of the disorder. If at least one of the people closest to the windigo has unusually firm control of his own impulses, the potential windigo's chances for recovery are good. If the others retain control of their impulses, but are not secure in their control, the usual outcome is that they kill the incipient windigo. If one or more of the others is losing control of his own cannibalistic impulses, the outcome is usually cannibalism, often for two or more individuals.

In helping the individual to maintain control of his impulses it is essential that there be someone who expresses in all his behavior his confidence that the incipient windigo can and will maintain control of his impulses. Such an expression of confidence in another's control is possible only for one who is confident of his own control of his similar impulses. Conversely, if there is no one close to the patient who is unthreatened by the patient's impulses, then the patient's assaultiveness will be increased. Indeed if others share his impulses, they may subtly encourage the incipient windigo to act on these impulses, either taking vicarious satisfaction in the other's cannibalism or joining in the eating.

Actions which aid the incipient windigo to maintain control of his emotions probably also tend to reduce the strength of the cannibal impulses by reducing the patient's hostility. This follows from the assumption that if someone, particularly one who may have had a part in arousing the hostility, pays attention to the incipient windigo, such expression of love will tend to reduce, and perhaps reverse, the instigation to hostility.

In each of six "cured" cases there was at least one person who was unafraid of the patient and who took some responsibility for his behavior. In four cases, someone also gave the patient tender nursing care. This treatment contrasts markedly with the 15 cases in which the patient was killed and with those cases in which there was actual cannibalism. Fear of the patient seems to have characterized everyone associated with these patients. This is not surprising since the typical personality of the Northern Algonkians is such that most people should be expected to have deeply hidden cannibalistic impulses, the presence of which would tend to produce fear in the presence of a person struggling to control his own heightened cannibalistic tendencies.

There is only one case among the Indians in which curative efforts for windigo sickness were described and in which the efforts were unsuccessful. This patient was killed by the other members of the band when they felt that their curative efforts were to no avail. The efforts at curing this man seem to have involved no personal interaction with him, and it is also clear that the concern of others was with their own safety and not with helping the "patient."

In most of the remainder of the cases, the first action considered when people became convinced that they had a windigo case on their hands

seems to have been the preventive execution of the patient. These reactions certainly suggest fear of the patient.

The apparent strengthening of the individual's control by the behavior of the individuals who are close to him contrasts markedly with the situation in those cases where cannibalism occurred. In the cases of cannibalism, development of depressive symptoms is never reported and, in many cases, the interaction appears to have been such as to weaken the controls of two or more individuals simultaneously, resulting in a group cannibalism. The finding that a majority of the individuals who became cannibals did so along with at least one other person is consistent with the hypothesis that the outcome of a case of incipient windigo psychosis depends on the degree of control of their own impulses exercised by the people who are close to the patient.

Whereas it seems to be the case that both the cures and preventive executions depend in part on the ability of those around the patient to control their own cannibalistic impulses, it also seems clear that there is something about some groups which tends to promote the acting out of normally rejected impulses.

The original hypothesis asserts that, if two persons are emotionally close, then one of them may indicate by his behavior that he would get vicarious satisfaction from the second person's carrying out a forbidden act. If the second person has impulses toward this act, then the indication of approval for this act from the first person, added to the "intrinsic" rewards from following the impulse, leads the second person to act on the impulse. Indeed, if the second person wants the approval of the first person, he may give the first person the vicarious satisfactions the first wants, even though the second person has fairly strong resistance to performing the tabooed act. To apply this hypothesis to the case of joint cannibalism, it is merely necessary to assume that each individual is communicating to the other that he would gain some satisfaction or tension release from the other's cannibalism and that each sould approve of the other's violation of the taboo on eating human flesh.

Since a majority of all cases of cannibalism involved two or more people, it seems necessary to account for this on the basis of some characteristic of the groups or of the interaction of their members. Although not demonstrable with the available data, the hypothesis that some people with relatively weak control of their impulses encourage each other to violate the taboo on cannibalism helps us to understand some otherwise puzzling cases and is consistent with the available data.

In general summary, the example of the windigo disorder shows that the peculiarities of individual deviant behavior are products of cultural and social factors as well as of individual psychodynamics.

Postoperative Psychosis in Cardiotomy Patients

Ottis L. Layne, Jr. and Stuart C. Yudofsky

Postoperative psychosis is striking in its predeliction for patients who have undergone open-heart surgery. The rate of psychosis among general surgical patients is less than 0.1 percent. Characterized by transient perceptual distortions, visual and auditory hallucinations, disorientation and paranoid delusions, the psychosis appears after a brief postoperative lucid interval. Somatic concomitants, including hyperventilation, tachycardia and anorexia, can impede surgical recovery and cloud interpretation of the patient's clinical state. Delirious and agitated, the patients may be driven to such deleterious actions as pulling out tubes or attempting suicide.

The purpose of this investigation was to examine, under controlled conditions, the roles of organic and nonorganic stresses in the development of postoperative psychosis. Chosen as the primary subjects for the study were all patients over 14 years of age who underwent intracardiac surgery on two separate cardiovascular surgical services during a 4-week period. All patients in the study were given comprehensive neurologic examinations during the evening before operation. In addition, two out of every three of these patients were extensively interviewed in the evening before cardiac surgery and were termed the "experimental cardiac group."

The cardiac patients who were given the neurologic examination alone were termed the "cardiac control group." A third group of patients, the "vascular control group," underwent major vascular surgery on the same surgical service as the cardiac groups. Before operation they received only neurologic examinations.

After surgery, the mental status and physical recovery of each patient were assessed daily, and neurologic examinations were given to all patients on the second postoperative day. Patients in the experimental cardiac group were reinterviewed and asked the same questions on the seventh to the tenth postoperative day.

To evaluate the most commonly reported organic contributions to the development of the psychosis, the following data were isolated and recorded on every patient in the study: age and sex; past medical history; preoperative clinical condition; type of surgical procedure time on cardiopulmonary bypass and condition during surgery; postoperative complications and clinical condition; and medications before and after operation, including equivalent doses of morphine and meperidine administered after operation to patients in all groups.

The preoperative interviews and questions posed to the experimental cardiac group were designed to assess possible psychologic determinants of postoperative psychosis. To this end a numerical score was assigned before operation to each patient in this group in each of the following categories: degree of anxiety; level of information about disease and surgical procedure; motivation for surgery (including ambivalence); and distortions in body image.

Patients in the cardiac control group were neither given preoperative psychiatric interviews nor granted special attention for alleviating apprehensions about their surgery. Patients

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in the vascular control group were selected to isolate the responses specifically elicited by intracardiac surgery. These patients were operated upon by the same surgeons, cared for by the same personnel and maintained in the same facilities as patients in the cardiac groups. Owing to the similarity of the postoperative conditions the possible importance of sleep and sensory deprivation could be evaluated.

In eight of the 58 patients who underwent cardiotomy postoperative psychosis developed, usually becoming manifest within the first 48 hours. The mean age of the patients who became psychotic after operation was 53 years, whereas that of those in whom the syndrome did not develop was 41 years. Of the female patients in the cardiotomy groups, postoperative psychosis developed in one of 24; the syndrome was recognized in seven of 34 males. Four of the 40 patients in the experimental cardiac group became psychotic after operation, and in four of the 18 patients in the cardiac control group the syndrome developed. No patient in the vascular control group became psychotic.

Four of the eight patients in whom postoperative psychosis developed displayed obvious organic concomitants or abnormal neurologic signs. Among the cardiac patients in whom postoperative psychosis did not develop, four exhibited organic predispositions in the syndrome. These patients were in the experimental cardiac group and received the preoperative interview.

The mean preoperative anxiety score of the patients in the experimental cardiac group in whom postoperative psychosis developed was 2.75, and in those in whom the syndrome did not develop the score was 6.39. This difference was statistically significant. There were no apparent associations between various motivations and the development of postoperative psychosis. There were no differences in body image between patients in the experimental cardiac group in whom postoperative psychosis developed and those in whom it did not. There were no statistically significant differences in information between patients in the experimental cardiac group in whom postoperative psychosis developed and those in whom it did not.

Postoperative psychosis in cardiotomy patients is multidetermined. That half the patients in whom the syndrome developed showed neurologic or other organic complications indicates the importance of organic factors in the etiology. The association of postoperative psychosis with increased age and its increased frequency in males support the speculation that atherosclerosis and cerebral ischemia contribute to the development of the syndrome.

The most important psychologic finding is the fact that in patients who did not or could not express preoperative anxiety postoperative psychoses developed more frequently. Such patients relied heavily on the defense mechanism of denial. After the severe physical assault of surgery and in the unfamiliar atmosphere of the intensive-care unit, the mechanism of denial became inadequate. Underlying fears and mistrust emerged. In this light it is not surprising that the resulting psychoses contained strong elements of paranoia.

This study provides evidence that preoperative psychiatric interviews and personal attention reduce the frequency of psychosis after intracardiac surgery by approximately 50 percent. It is recommended that a discussion of the psychologic and other personal aspects of the disorder be a part of the preoperative examination of all cardiotomy patients.

Emotional Reactions of Young Children to TV Violence

D. K. Osborn and R. C. Endsley

In a period of only 20 years, television has become an integral part of the lives of virtually all American children. While critics of TV programing have deplored the presentation of excessive violence, little is known about TV's current or potential impact on young children. Little work exists to demonstrate whether or not children's emotional reactions, as revealed in various physiological measures, are influenced by film-mediated violence. This study attempts to demonstrate a causal link between a measure of emotional sweating in children and film episodes containing violence. In addition, an exploratory effort was made to examine the effect of presenting filmed violence via real human models as compared with cartoon models. Supplementary data concerning subject's verbal judgments about the films and recall of the film episodes were also examined. Finally, we endeavored to develop a useful procedure for obtaining a continuous record of emotional sweating from 4- and 5-year-old subjects.

Phrases such as "sweating it out" reveal the common man's awareness of a relationship between the flow of perspiration and subjective emotional experiences. Techniques are available which measure the amount of emotional sweating by recording the conductance of a subliminal electrodermal current as it is affected by changes in perspiration in a skin zone such as the hand or fingers. The measure of electrodermal conductance has been termed the galvanic skin reflex (GSR).

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While the GSR has been widely used with adult human subjects, except for scattered infant research, GSR studies with children from 3 to 6 years of age are virtually nonexistent. Previous investigators have been discouraged by the problems of adapting GSR laboratory procedures requiring subject's sustained motor inactivity and attention to examiner-presented stimuli to children who are commonly regarded as spontaneously active and easily distractible. One of the purposes of this study was to develop a useful laboratory procedure for measuring the GSR.

Twelve boys and 13 girls, ranging from 4.5 to 5.5 years in age, were selected as subjects. They were mostly from middle-class families and possessed normal intelligence.

The apparatus consisted basically of equipment to present film episodes via closed-circuit TV and an instrument to record the GSR. The TV studio equipment was used for presenting five videotaped episodes to subjects on a TV monitor. The five episodes were identified as follows: (1) Standard (Std); (2) Human Violence (HV); (3) Cartoon Violence (CV); (4) Human Nonviolence (HNV); and (5) Cartoon Nonviolence (CNV). The GSR instrument consisted of a device for measuring variations in skin resistance produced by momentary changes in palmar sweating. Variations in skin resistance, and hence corresponding changes in sweating, were reflected in recorder readings which ranged from zero (high sweating) to 100 (low sweating).

Care was taken to familiarize each subject with the apparatus and proce-

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dure prior to the test phase of the present study. All subjects appeared interested and willingly allowed the electrodes to be attached to the left index and left little finger. Each subject was accompanied by two examiners (E_1 and E_2) to the testing room adjacent to the TV studio for the test session. After being seated with E_1, electrodes were attached to the subject's fingers, and the TV series was begun. The first film presented to each subject was Std. During the first 3 minutes of Std, E_2 adjusted the GSR instrument so that the recorder reading appeared to stabilize between 80 and 90. No further adjustments were made during the last minute of Std. Immediately following Std, the first of the four treatment films was presented.

Following the last film episode, E_1 presented subject still photographs representing each of the five filmed episodes and asked him to point to the "TV movie" he "liked best" and to the movie which was "the scariest." One week later, a second interview was conducted with each subject. The same questions concerning movie best liked and movie considered scariest were asked using the procedures employed in the first interview. In addition, subject was asked to tell E_1 what he remembered about each movie.

Recorder readings on each subject were obtained every 15 seconds, including the five readings obtained during the last minute of Std, and the 12 readings occurring during the full 3 minutes of the four treatment films. A mean of the five Std readings was obtained for each subject for purposes of providing a baseline measure of GSR. Recorder readings from each fifteenth-second interval during each of the treatment films were then subtracted from the mean baseline reading. The difference scores thereby provided a value which was positive in sign when emotional sweating (ES) was greater during treatment than baseline, and negative in sign when emotional sweating (ES) was less during treatment than baseline.

In order to consider the effects of film violence and film character uncontaminated by the possible "carry over" effects of preceding films in a given order, ES data from the first film only were analyzed separately. The ES data were subjected to a three-factor analysis of variance in which the main effects were Movie Affect (violence, nonviolence), Movie Character (human, cartoon), and Time Intervals (15 seconds, 30 seconds, . . . 180 seconds).

All effects, except for the main effect of Movie Character, proved to be significant. However, the result of interest was the significant triple interaction of Movie Affect, Movie Character, and Time Intervals. Selected followup analyses of the significant triple interaction revealed that subjects shown HV first increased in ES from baseline to treatment significantly more than did subjects in the other film conditions over the last four time intervals. Because of the evidence of carryover on early trials, and because the violence actions were most intense during the last 30–40 seconds of HV and CV, only the data from the last three time intervals were considered for analysis. A mean change in ES for time intervals 150, 165, and 180 combined was obtained for each subject, and these data were subjected to an analysis of variance in which the main effects were Movie Affect, Movie Character, and Film Order. Results of the analysis revealed a significant effect of Movie Affect and a significant Movie Affect × Movie Character interaction. Followup analyses of the Movie Affect × Movie Character inter-

action revealed that subjects increased ES significantly more in HV than in CV and increased ES significantly more in CV than in either HNV or CNV.

Each subject's verbal responses to the request to tell what he could remember about each film were analyzed in terms of the number of subject-verb phrases each subject supplied in his account of each film. Subjects recalled significantly more from: (1) HV than from CNV, CV, Std, or HNV; (2) CNV than from Std or HNV; and (3) CV than from HV.

The major results may be briefly summarized as follows: (1) Subjects responded more emotionally to the two films portraying violence (HV and CV), particularly to HV in which human characters were employed; (2) subjects also predominantly selected HV as the scariest film and recalled more details of the HV episode; (3) subjects liked CNV best, and as a group the two cartoon films (CNV and CV) were preferred over the two films involving human characters.

The emotional experience involved in viewing HV and CV, particularly HV, appears on several grounds to be that of mild fear. First, all subjects who selected a film as the scariest picked HV or CV, with most selections being HV. Second, only a few subjects who rated HV as the scariest also picked it as the best-liked film. Third, a few subjects spontaneously verbalized their fear while viewing HV. Finally, during a followup meeting with the parents to describe the results of the present study, two parents reported that their children had been troubled by the HV film.

Since HV and CV differed in many other potentially relevant respects besides that of type of film characters employed, it is impossible to conclude from the present findings why HV produced more emotionality than CV. However, it is tempting to suggest that the cartoon media may lessen the emotional impact of violence due to the greater degree of unreality associated with the physical and behavioral attributes of cartoon characters. The fact that subjects were able to recall almost twice as much detail about HV than about any other film raises an interesting question concerning the relationship of emotionality and recall.

Little trouble was experienced in familiarizing subjects to the constraints of the GSR apparatus and in directing their attention to the treatment stimuli. By using film stimuli and electrodes which permit some hand and finger movement, the problems of measuring GSR with young, active children appear surmountable.

The Impact of Technology on Culture and Emerging New Modes of Behavior

TALCOTT PARSONS

Culture may be thought of as the complex of symbolic systems by which men in society orient themselves to their environments and define their relations to others within the human condition. It consists of media of expression and communication, such as languages, of content such as ideas or knowledge, of constitutive and expressive symbols which are vehicles for manifesting attitudes, and of moral or otherwise evaluative conceptions. One of the main axes on which cultural systems are organized is the distinction between the rational and the nonrational, the former having to do with what we ordinarily think of as knowledge, the canons of its validity, and the conditions of its applications or usefulness. The nonrational thus seen is a residual category in that it concerns modes and areas of symbolization where cognitive considerations are treated as irrelevant or secondary.

Technology is conceived as modes in which knowledge is made instrumental in the interest of goals or purposes, the significance of which is not given in the body of knowledge itself. The application of pre-existing knowledge to technological uses is a two-way relationship and frequently yields both new knowledge and new technological advances.

Knowledge applied in technology has, for most of the human history, been empirical rather than scientific, and indeed much of it is so today. Technology as systematic application of the scientific level of knowledge, and the deliberate use of research methods for the solution of technological problems, has been conspicuously gaining force for about a century now. By far the most impressive technological advances have occurred in the application of physical, and now increasingly biological, science. The social-behavioral sciences should not be forgotten, however; although their technological contributions so far have been rather slight, it seems likely that in the future they will increase greatly.

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Attitudes toward Technology

Auguste Comte made a surprisingly correct judgment for the development not only of science, but of technology, when he outlined the succession of physics, chemistry, biology, psychology, and sociology. Perhaps the most important factor underlying the pattern of succession was that of relatively direct human involvement in the phenomena studied by the respective sciences and hence technologically controlled by their application. The physical and even the chemical aspects of the human organism can be technologically utilized.

Yet these are very different from totally inorganic objects, the destruction of which need not, except for scarcity or pollution problems, raise questions of propriety, to say nothing of ethics. The burning of fuel, such as wood, coal or oil, may deplete the supplies available to others, including of course future generations. Similarly, mass burning of fuel in crowded population centers may produce a sufficient concentration of waste products

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so that regulatory restriction becomes desirable if not imperative. When we come to the level of the living organism, however, a new set of questions arise on rights to use such objects, often, but not by any means always, through their destruction.

Though Western men are overwhelmingly meat-eaters, which is to say conscious destroyers of higher organisms of relatively closely related species, these dietary customs are hedged about by strong feelings about the importance of humane practices of slaughter and indeed, certain special symbolic animal friends of man, especially the dog and the horse, are widely taboo as sources of food. From these pervasive sentiments, it is not a long step to the treating as problematical, more obviously, the instrumental utilization of human properties and capacities, and even the study of human beings as experimental or other subjects. Indeed in human life generally there seems to be a deep-seated tension between the expressive aspects of the orientation of action, as they are sometimes called, and the instrumental. As knowledge advances new elements are drawn into the orbit of instrumental use, from the physical world, from that of organisms and from that of human action and culture.

At the same time uses as instrumentality, which were at certain periods accepted, have come to be prohibited. Perhaps the most striking case is that of slavery and other forms of involuntary servitude. Even the modern system of employment for wages has been called "wage slavery" and the whole Marxian tradition has spoken of the "alienation" of labor from the ownership of the means of production and the product as immoral. The core of the charge seems to be the feeling that instrumental use of human capacities for the benefit of others is unacceptable.

Instrumentalism and Determinism

This uneasiness about instrumentalism relates to a still deeper one about determinism. The freedom of God and man have from ancient times been felt to be inextricably linked and indeed, in some versions, the only tolerable basis of any limitation on human freedom has been felt to be the direct will of God. Since the beginnings of the scientific movements which have underlain the development of modern technology there has been a series of new invasions of determinism into spheres previously felt to be areas of freedom for either God or man, or both.

The first main deterministic intrusion was that of the Copernican Revolution. Whereas previously the earth had been held to be the center of the created universe it now came to be treated as a mere orbiting satellite of the much greater sun. The regularities in the processes of the solar system, eventually formulated by Newton, seemed totally incompatible with the idea that the motions of the planets could be understood as direct moment-to-moment expressions of the divine will. Both man and God were apparently deeply derogated by this scientific development.

Another disturbing intrusion of comparable magnitude occurred in geology and evolutionary biology. According to the former, the earth and its inhabitants could not have been created in 6 days, but were the product of an evolutionary process extending over millions of years. Then, as Darwin showed, the species including man could not be understood each as a special divine creation, but were also the outcome of a gradual evolutionary process. This development again dero-

gated God by depriving him of the continuing and particularized role of Creator, and again seemed to derogate man by making him only another species of animal emerging by the evolutionary process.

At nearly the same time, men not only enslaved each other through authoritarian political systems, and were enslaved by physical nature, but they became victims of pervasive systems of enslavement where a system, namely capitalism, was understood to be the source of enslavement. Here, according to Marxian thought, it was man, not God, who was responsible for the enslavement; there could and should be a leap into freedom which would, through the Revolution, abolish the system of constriction.

From the point of view of the utopias of socialist thought, not only was the Revolution disappointing, but the turn of the century saw the emergence of two further incursions of the determinism of nature into previously treasured areas of human freedom. These were the development of psychology as a science, especially psychoanalysis, and of sociology.

In certain respects the emergence of modern psychology has been an extension into the field of behavior, motives, and ideas of the individual of Darwinian biology; it has introduced a new area of determinism on human nature. The psychoanalytic branch has had the greatest impact, since it has tended to locate these deterministic forces in the unconscious, with a presumption that this was the product of inherited instinct beyond control of the will.

Still another gap in this range of alleged freedom has been felt to be narrowed if not closed by the emergence of sociology as a major intellectual discipline. In contrast to economics and political science, sociology has intruded deterministic considerations at a particularly sensitive point, namely the more nonrational bases of collective solidarity and the security of individuals in solidary relations to their fellows. The paradox of the bases of such solidarity was perhaps first sharply stated by Rousseau. The freedom of the state of nature was to him a deceptive freedom, but the only alternative to it he saw was the total ascendancy of the general will which might be interpreted as scarcely favorable to the freedom of the individual.

The difficulty here is to understand how freedom is compatible, if at all, with the constraints necessitated by collective life. In economics the ambivalence has contrasted freedom for pursuit of self-interest with exploitative constraint by capitalism; whereas in sociology it has contrasted freedom of natural spontaneity with pressure to collective conformity.

Ambivalence toward Rationalization

The main structure of ambivalence is common to all three of these fields, namely science, technology and rationalized social organization. On the one hand advance in one or a combination of these respects has been widely interpreted as belonging among the highest human achievements and as having, in some sense, liberating consequences. Indeed a society, the central values of which are activistic, is almost driven to the feeling that the pursuit of knowledge is essential to its prosperity and development as a society.

The other side of the ambivalence is that advances in rationalization destroy old freedoms and impose new and undesirable constraints. The ideal state then is held to be one of innocence in the sense of no knowledge of the possibility of evil, and of behaving naturally and spontaneously without

constraints imposed by technical knowledge and by complex social organization.

The ambivalence in question is not, however, confined to that between rational and nonrational emphases, there being another focus of ambivalence within each category and cross-cutting the line between them. Man, as a cultural animal, is involved in a dual process of adaptation to the various aspects of his environment. On one hand he is concerned with understanding, mastering and utilizing elements of the human condition shared with other species and categories of the world. On the other hand, man is undergoing a process which has sometimes been called creative evolution, of which he is an agent, if not the primary agent. He is continually creating new conceptions of reality, new values, new symbolic systems at many levels. The creative process clearly includes rationally deliberate creation and nonrational components of charisma and of motivation.

There is clearly an intimate relation between these two nonrational classes of components of action and the whole complex of negative reactions to the rationalized sectors of society and culture including of course many aspects of technology. A certain ideal calls for a balance among these components expressed in a genuine integration of the rational with the nonrational and, within each category, the adaptive with the creative components.

Sociocultural Change

Such integration, however, is never perfect and such approximations to it as empirically exist are always in some respects precarious and vulnerable to disruption. An important concept defining a focus of such vulnerability is what some sociologists called "structured strain." This, for a social system, is a state where some class or classes of roles are subject to normative expectations or other pressures with which their adaptive resources either are unable to cope, or can do so only with difficulty. In this sense, strain is a way of characterizing a state of unstable equilibrium in a sector of a social system.

I am suggesting further that processes of social change produce such strains or intensify strains which are present. What I have above called the process of rationalization is inherently a source of continual social change. The pursuit of knowledge fails if it does not change the state of knowledge in the relevant field. If this is true of knowledge as such, its technological implications probably will be propagated from the realm of pure knowledge to that of technological application, not only because there is a demand for better ways of doing things, but also because people who command new knowledge will see possibilities of technological improvement and take steps to effect such improvements.

A society in which the rational components of action are strongly emphasized and are given high priority will therefore be a dynamically changing society. In this aspect of the processes of change technology, the cognitive aspects of culture and the rationalized aspects of social organization will be in continual interaction and interdependence with each other. Both generate new modes of behavior in the roles of scientists and other professionals in the pursuit of knowledge and in the roles of personnel involved in technological fields. The immense impact of new technologies on the behavior of consumers who have no special sientific or technological competence themselves is illustrated in the

equipment of the modern middle-class household. Then of course there is the negative side—new modes of behavior must be undertaken to cope with dangers such as explosions or other accidents, and many forms of physical pollution, etc.

Many imbalances are created in the process which result in a variety of structured strains, the primary focus of which may be in the rationality complex itself. An example is that of traffic congestion—not only does it contribute to air pollution, but it occasionally makes the automobile, as a rapid and convenient means of transportation, self-defeating.

It seems correct to say that such imbalances and bottlenecks within the rationality complex create frustrations which constitute at least one of the most important points at which the nonrational components play a central part. The inherent dynamic processes of the rationality complex, certainly in a modern society, mean that as a consequence of such dynamism, changes will have to occur both in the internal organization of the system and in its relation to its environments. Beyond this, there are two problematic areas: the nature and magnitude of independent processes of change in the nonrational sectors and the state of affairs with respect to adaptive capacity. Hence the question of understanding the outcome of social changes involves not only understanding the nature and magntiude of the changes, but the capacities of the system, or its relevant parts, to cope with them.

The nonrational motivational factor does not enter into the determination of the action process as an input in the raw hereditary state, but through "learning" or "socialization." It therefore becomes a genuine variable, not only as a function of individual genetic differences and genetic change at the species level, but also a function of differing learning and socialization processes. Thus, there is much interconnection between patterns of reaction to strain in adults and the patterns of socialization which they experienced in childhood.

The frustrations and other psychologically significant definitions of the situation generated by changes in the rationality complex, will have differentiated types of impact on the nonrational complex. There are, however, certain bases of generalization available. Whatever the source of frustration and correspondingly of the need which is frustrated, there are certain alternative types of response available to an actor. One is adjustment related to passive adaptation and sometimes also acceptance. If, however, the response is non-accepting, one important generalization of modern personality psychology is that the main thrust of the response will be either regressive or creative.

The regressive alternative is activation and expression of motives which were important and presumably adaptive to earlier phases of an individual's development but which are maladaptive in the current situation. It is, however, dangerous to assume that this is always, or even predominantly, the case. In the interaction, for example, between adults and children over a generation or two, there probably are cumulative processes of change which in turn may have a conditioning effect on processes in the rationalized spheres. One part of the resulting complex in turn is "independence training", or rewarding the child for early assumption of autonomy. This process, in altering the non-rational structures, could free the individual for more effective participation in relatively rationalized occupational roles. But it could also substantially alter the

structure of authority and could undermine motivation for occupational achievement. There is speculation that something like this has been happening in the current younger generation, though there is little solid evidence. It is clear that one kind of factor promoting such a trend would be the activation of strong regressive motives working toward hostility to and/or withdrawal from some of the rationalized structures.

It seems probable that predominance of the creative direction of change in the nonrational category is a function of innovation at the charismatic levels. Such changes concern the search for what is called "meaning." This has a cognitive aspect in the clarification of values and of the philosophical grounding of value-choices. At the same time a central thesis in one theorized sociology of religion is that the primary impetus to change in the religious area, and certain others close to it, has lain in the creative nonrational components of action. For example in some prophetic movements nonrational components have appeared to be the principal source of major orientational changes.

The interdependence of such charismatic innovations with the rationality complex at the cultural level is illustrated by the relation between puritanism and science and has been related to the development of bureaucratic organizations, especially in the non-governmental sectors of modern society. Finally, there are close relations of interdependence between the charismatic and the non-normative, nonrational motivational complexes.

Technology and Ideology

In characterizing the more developed sectors of contemporary society one usually emphasizes the role and prominence of technology. This is probably related to the fact that the older characterizations of "capitalistic" and "socialistic" seem to have been losing their salience, both because of discerned similarities between so-called captialistic and socialistic societies, and because now the organization of the economy is not felt to deserve the place of primary salience.

There is, however, a significant ambiguity in this new characterization. On the one hand it may be seen as an accentuation of the trend toward materialism in that the most prominent technologies are involved in manipulation of the physical world and in mastery of the physical environment. On the other hand it is clear that the most important single factor in the growth of technology is cultural, not material—namely, the advancement of knowledge. Furthermore, it is clear that, with all due qualifications, materialistic motives are not dominant in the pursuit of knowledge.

Moreover, as the more lagging disciplines mature, it is significant that technological patterns have been developing in less and less material aspects of the human condition. Generally speaking the interest in health, including the saving of lives through medical and public health measures, is not defined as so predominantly materialistic as is the pursuit of economic welfare in any way, but particularly by ways involving the profit motive. There are already numerous examples in the field of social organization as significantly affected by the application of systematic rational knowledge as in physical fields where massive successes have been achieved. In this context it is easier to appreciate the very qualified sense in which the modern world has become a technological society.

Technology in Social Structure

It was the fallacy of the "technocrats" to suppose that with the advance of technoogy economic problems would disappear. Technological advance intensifies rather than mitigates the urgency of economic problems, because the more that can be done with resources, the greater the competition to gain control of them.

The economy in this sense is a part of the rationalized complex of modern societies, but a different part from the technological and the knowledge complex, however intertwined and interdependent they are. Tensions in the economic sphere, brought about by technological change, constitute an important source of new behaviors and in some respects of culture, most obviously through change in the discipline of economics.

Similarly it should not be forgotten that the political aspect of the structure and process of modern societies has diminished in favor of technology. By this I mean the structures and processes involved in reaching and implementing collectively binding decisions, whatever the collectivity of reference. The relation of the political factors to the technological is somewhat like that of the economic, in spite of some obvious differences.

An ideal-type bureaucracy is a technological instrumentality of political functions; its function is not to make policies but to implement them. The technology is so far largely empirical but the component of scientifically rational knowledge is increasing and this process may be expected to accelerate in the future. Of course, the social components of bureaucratic organization are also increasingly intertwined with other, often physical, components such as the computer. The decision-making as distinguished from implementing aspects of the political system articulate it into the interest structure of associational and community solidarities and cleavages. Here the pluralistic character of modern societies becomes especially important. In part the political function in this aspect is to adjust differing and partly conflicting interests so that effective collective action becomes possible, or the reaching of higher levels of integration than would otherwise exist is facilitated.

The integrative problem on which political process impinges involves a combination of rational self and group interests, and of impingement of the nonrational factors—e.g. group sensitivities—on collective decision-making. The importance of the nonrational components is in part manifested in suspicion of and hostility to bureaucracies on the part of various political constituencies. This is an important case of the impact of technology on modes of behavior, and so far as such attitudes become ideologically structured, on culture. Various aspects of bureaucracy are in turn influenced by such strains.

Political decision-making is also governed or regulated by a normative system thought of as legal, obviously in the case of norms backed by governmental legitimacy and enforcement, but more generally also in private sectors. Unlike bureaucracy, law should not be considered as primarily a technological instrumentality, but rather a regulative-integrative framework defining rights, obligations, and expectations for components of a society, including the processes of collective decision-making themselves.

A particularly important aspect of law is the procedural one. Thus in representative political systems electoral rules are procedural institutions, defining the conditions of legitimately engaging in certain actions. Procedures in decision-making collectivities,

such as parliaments or multiple-judge courts, are normatively regulated in this sense, including not only voting but discussion. Similar considerations extend to communication systems where formal collective decisions are not at stake. The so-called "free market of ideas" is such a communication system.

Both the political process and law articulate into solidary aspects of the various levels of community. The most comprehensive, highly institutionalized level so far is the community aspect of a politically organized society, or, properly defined, a nation. The bases of solidarity depend above all on a special synthesis between the normative components of the rationality complex, especially law, and the non-rational complex in both the motivational and the charismatic aspects.

Community solidarity, with reference to both its main components and to the result of their organization, is in certain respects the antithesis of technology. It is generally quite explicitly not of salient instrumental significance; it is functionally diffuse as a focus of loyalties and does not implement specific goals. Indeed, the very prominence on the one hand of the tendency to characterize modern society as technological and on the other hand of the search for community testifies to the structured strains which operate in this area.

Both community solidarity and technology, along with other elements, are essential ingredients of a society of the modern type, as in different forms of other types. One way in which the development of technology stirs up new modes of behavior is clearly to stimulate negative reactions against what is interpreted to be technologizing. A society which is only or even primarily one vast technological instrumentality is not viable. However, without technology on a grand scale, and the related elements of the rationality complex, modern society is surely not viable either.

Human Problem Solving: The State of the Theory in 1970

HERBERT A. SIMON and ALLEN NEWELL

Theory of Problem Solving—1958

In an earlier paper our research group reported on 2 years of activity in programing a digital computer to perform problem-solving tasks that are difficult for humans. Problem solving was regarded by many, at that time, as a mystical, almost magical, human activity, and we searched for a statement of what it would mean to explain human problem solving. Failing to discover a statement that satisfied us, we manufactured one of our own:

A theory of problem solving should: predict the performance of a problem solver handling specified tasks; explain how human problem solving takes place; predict incidental phenomena, and their relation to the problem-solving process; show how changes in the attendant conditions alter problem-solving behavior; explain how problem-solving skills are learned, and what the problem solver "has" when he has learned them.

We can sketch out the strategy of a research program for achieving such an explanation:

1. Discover and define processes that would enable a system to perform tasks like those a human performs when he is thinking.
2. Construct an information-processing language for computer programs using the defined information processes.
3. Define a program capable of solving problems that humans find difficult, using in the program processes that resemble those used by humans.
4. Obtain data on human behavior in solving the same problems, then modify the program to better approximate human behavior.
5. Repeating the first four steps for each of several human problem-solving and thinking tasks.
6. After human behavior has been approximated, construct more general simulation programs that can attack a range of tasks.
7. Examine components of the simulation programs for their relation to such elementary human performances as rote learning, elementary concept attainment, immediate recall, and so on. Test and improve the problem-solving theories.
8. Search for new tasks that might test theories and show their implications.
9. Search for neurophysiological counterparts of elementary information processes postulated in the theories.
10. Draw implications for improvement of human performance; develop and test application programs.
11. Review progress and lay out a strategy for the next period.

The Logic Theorist—In 1958 a set of basic information processes for manipulating nonnumerical symbols and symbol structures had been devised, a class of information-processing languages had been designed and implemented, and a program, The Logic Theorist (LT), had been written in one of these languages and had been shown to be capable of solving problems difficult for humans.

LT's ability to discover proofs for theorems in logic showed that, with capabilities for reading, writing, storing, erasing, and comparing patterns, a system could perform tasks that in humans require thinking. Therefore it suggested that these capabilities, and no others, should be postulated to account for human thinking. It was proposed that an explanation of organism behavior is provided by a program of information processes generating behavior; LT was exhibited as an example of such an explanation.

Programs like LT are explanations of human problem-solving behavior only to the extent that the processes they use to discover solutions are the same as human processes, and there

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were important differences between LT's processes and those used by human subjects to solve similar problems. Nevertheless, the program did capture the central process in human problem solving: LT used heuristic methods to make selective searches and cut down problem spaces to sizes that a slow, serial processor could handle. Heuristic methods that make this selectivity possible have turned out to be the central magic in all human problem solving that has been studied to date.

Mentalism and magic—The LT problem-solving demonstration defined the terms of the next stages of inquiry: to discover the heuristic processes actually used by humans to solve such problems, and to verify the discovery empirically. Natural language formulations of the phenomena of human thinking did not yield explanations of what was going on; formulations in information-processing languages appear to be yielding such explanations.

Theory of Problem Solving—1970

We should like to give a brief account of the theory of human problem solving that has emerged from the past 12 years' research on information-processing psychology in problem solving, learning, concept formation, short-term memory phenomena, perception, and language behavior.

The theory makes reference to an *information-processing system,* the problem solver, confronted by a task. The task is defined objectively in terms of a *task environment.* It is defined by the problem solver, for purposes of attacking it, in terms of a *problem space.* The shape of the theory can be captured by four propositions: Only a few, gross characteristics of the human information-processing system are invariant over task and problem solver. These characteristics are sufficient to determine that a task environment is represented as a problem space and that problem solving takes place there. Structure of the task environment determines the structures of the problem space. Structure of the problem space determines programs that can be used for problem solving.

Characteristics of the information-processing system—Basic characteristics of the human information-processing system that shape its problem-solving efforts are: serial processing, small short-term memory, infinite long-term memory with fast retrieval but slow storage. These characteristics impose constraints on ways the system can seek solutions to problems in larger problem spaces.

Evidence that the human system has the properties we have listed comes partly from problem-solving behavior itself, but details of the human information-processing system are elusive because the system is adaptive. To the extent a system is adaptive, its behavior is determined by the demands of a task environment rather than by its own internal characteristics.

Structure of task environments—The study of human behavior in problem situations reveals a great deal about the structure of task environments. Consider the cryptarithmetic problem

DONALD
+GERALD
ROBERT

The problem is to substitute numbers for the letters in the three names in such a way as to produce a correct arithmetic sum; the hint is given that D=5. If we look at the protocols of subjects who solve the problem, we find that they all substitute numbers for the letters in approximately the same sequence. First, they set T=

then E=9 and R=7, then A=4 and L=8, then G=1, then N=6 and B=3, and, finally, O=2.

To explain this regularity in the sequence of assignments, we must look first at the structure of the task itself. The task structure admits a heuristic that involves processing first those columns that are most constrained. If two digits in a single column are already known, the third can be found by applying the ordinary rule of arithmetic. Hence, from D=5, we obtain the right-most column: 5 + 5 = T, hence T=0, with a carry of 1 to the next column. Each time a new assignment is made in this way, the information can be carried into other columns where the same letter appears, and then the most-constrained column of those remaining can be selected for processing. For the DONALD + GERALD problem, the correct assignments for T, E, R, A, L, and G can all be found without trial-and-error search, leaving only N, B, and O for permutations of 6, 3, and 2. This heuristic of processing the most-constrained columns first also reduces demands on the short-term memory of the problem solver. All the information he has acquired up to any given point can be represented on a single external display, by replacing each letter by the digit assigned to it as soon as the assignment is made.

From our knowledge of this task environment, we can predict that an error-free serial information-processing system using the heuristic we have described *could* solve the DONALD + GERALD problem rapidly without using much short-term memory. But if it solved the problem by this method, it would have to make the assignments in the particular order we have indicated. The fact that human solvers do make the assignments in roughly this same order indicates that they are operating as serial systems with limited short-term memories.

Problem spaces — Subjects faced with the problem-solving tasks represent the problem environment in internal memory as a space of possible situations to be searched in order to find the one which corresponds to the solution. We must distinguish, therefore, between the task environment—the observer's way of describing the problem—and the problem space—the way a particular subject represents the task in order to work on it.

Each node in a problem space may be thought of as a possible state of knowledge to which the problem solver may attain. The problem solver's search for a solution is an odyssey through the problem space, from one knowledge state to another, until his current knowledge state includes the problem solution.

Problem spaces, even those associated with relatively "simple" task environments, are enormous. For a serial information-processing system, however, the exact size of a problem space is not important provided the space is large. A serial processor can visit only a modest number of knowledge states in its search for a problem solution. Problems with immense spaces inform us that the amount of search required to find solutions bears little or no relation to the size of the entire space. If the problem space has even a few thousand states, only highly selective search will solve problems in it. The power of heuristics resides in their capability for examining small, promising regions of the entire space and simply ignoring the rest.

Thus, to understand the behavior of a serial problem solver, we must turn to the structure of problem spaces and see how information can be extracted by heuristic processes and used to find a problem solution.

Sources of information in problem spaces—Problem spaces differ not only in size but also in the structure they possess. Structure is simply the antithesis of randomness, providing redundancy to predict properties of the space not yet visited from properties of space already searched. This predictability becomes the basis for searching selectively rather than randomly. Nonrandomness is information, and information can be exploited to search a problem space in promising directions and to avoid the less promising.

Each knowledge state is a node in the problem space. Having reached a node, the problem solver can choose an *operator* and can apply it to reach a new node. Alternatively, the problem solver can abandon the node he has reached, select another node and proceed. He must make two choices: choice of a node from which to proceed and choice of an operator to apply.

In most problem spaces, the choice of an efficient next step is a function of the problem that is being solved. Hence, an important technique for extracting information to be used in evaluators is to compare the current node with the desired and to extract *differences* from the comparison. These differences serve as evaluators of the node and as criteria for selecting an operator. Reaching a node that differs less from the goal state is progress and selecting an operator relevant to a difference between current node and goal reduces that difference.

The particular heuristic search system that finds differences between current and desired situations, finds an operator relevant to each difference, and applies the operator to reduce the difference is usually called means-ends analysis. Our data reveal means-ends analysis to be a prominent form of heuristic organization and the procedure is captured in the General Problem Solver (GPS) program. The GPS heuristic played the central role in our theory of problem solving for a decade, but data from a wider range of tasks have now shown it to be a special case of the more general information-extracting process.

Information obtained by finding differences between already attained nodes and the goal can be used for the choice of node to proceed from and the choice of operator to apply. Examining how this information can be used to organize search has led to an explanation of a phenomenon in studies of choice in chess. It was found that the move sequences explored by players was generated as a few explorations, each with few branches. After each branch had been explored to a position that could be evaluated, the player returned to the base position to pick up a new branch for exploration. This particular kind of exploration universal among the chessplayers studied, was called "progressive deepening."

The progressive deepening strategy is not imposed on the player by the chess task environment; one can show that a different organization, scan-and-search strategy, would permit more efficient search. Search proceeds by alternation of two phases—in the first phase, the most promising node is selected for continuation; in the second phase, a few continuations are pursued from that node forward, and the new nodes thus generated are evaluated and listed for Phase 1.

A powerful computer program for finding checkmating combinations constructed with the help of the scan-search strategy appears a good deal more efficient than the progressive deepening strategy. Nevertheless, humans do not use the scan-search procedure to organize their efforts.

Human use of the progressive deepening strategy as a response to limits of short-term memory further validates our description of the human information-processing system. When we write a problem-solving program without concern for human limitations, we can allow it as much memory of nodes on the search tree as necessary—hence we can use a scan-search strategy. To the human problem solver, with his limited short-term memory, this strategy is simply not available.

Where is the Theory Going?

The theory of problem solving in 1970 is primarily a theory that describes problem spaces and problem-solving programs, and shows how these adapt the information-processing system to its task environment. While research has answered some basic questions about problem-solving processes, it also has raised new ones: How do problem solvers generate problem spaces? What is the neurological substrate for the serial, limited-memory information processor? How can our knowledge of problem-solving processes be used to improve human problem solving and learning?

Constructing problem spaces—At least six sources of information can be used to help construct a problem space in the face of a task environment: the task instructions themselves; previous experience with the same task or a nearly identical one; previous experience with analogous tasks or with components of the whole task; programs stored in long-term memory that generalize over a range of tasks; programs stored in long-term memory for combining task instructions with other information in memory to construct new problem spaces and problem-solving programs; information accumulated while solving a problem which may suggest changing the problem space.

Evidence we have for the various kinds of information that are drawn on in constructing problem spaces is derived largely from comparing the problem spaces that subjects are observably working in with the information they are known to have access to. No one has, as yet, really observed the process of generation of the space—a research task that deserves high priority.

Some progress has been made, however, in specifying for computers programs that might be regarded as candidate theories as to how it is done by humans. These programs demonstrate that certain sets of information-processing mechanisms are sufficient to do the job over some range of interesting tasks. They do not prove that humans do the same job in the same way, using essentially the same processes, or that these processes would suffice for all tasks.

The processes for generating problem spaces are not unrelated to some other processes about which we *do* have empirical data—planning processes. In several of the tasks that have been studied, and especially in logic tasks, subjects are often observed to be working in terms more abstract than those that characterize the problem space they began with. They may be said to be abstracting from the concrete detail of the initial problem space in order to construct a *plan* for a problem solution in a simpler abstract planning space. Programs have been written that are also capable of such abstracting and planning, hence are capable of constructing a problem space different from the one in which the problem solving begins.

Production systems—A hypothesis about the structure of a complex system—like a human problem-solving

program—becomes more plausible if we can conceive how a step-by-step development could have brought about the finished structure.

A development of the past few years in computer language construction has created interesting possibilities—the languages known as *production systems*. In a production system, each routine has a bipartite form, consisting of a *condition* and an *action*. The condition defines some test or set of tests to be performed on the knowledge state. If the test is satisfied, the action is executed; if the best is not satisfied, no action is taken, and control is transferred to some other production. In a pure production system, the individual productions are simply listed in some order, and considered for execution in turn.

The attraction of a production system for our present concerns is that the individual productions are independent of each other's structures, and productions can be added to the system one by one. In a new task environment, a subject learns to notice conditions and make discriminations of which he was previously unaware. Each of these new discriminations can become the condition part of a production, whose action is relevant to that condition.

Perception and language—The subject of how problem spaces—internal representations of problems—are built up in human minds links problem-solving research with two other important areas of psychology: perception and psycholinguistics.

Information comes to the human problem solver principally in the form of statements in natural language and visual displays. For information to be exchanged between these external sources and the mind, it must be encoded and decoded. The information as represented externally must be transformed to match the representations in which it is held inside. It is very difficult to imagine what these transformations might be as long as we have access only to the external representations, and not to the internal.

Research on problem solving has given us some strong hypotheses about the nature of the internal representations that humans use when they are solving problems. These hypotheses should provide strong clues to the researcher in perception and to the psycholinguist in guiding their search for the translation process. We believe these cues have already been used to good advantage in both areas, and we anticipate a great burgeoning of research along these lines over the coming decade.

Links to neurophysiology—Explanation in psychology will not rest indefinitely at the information-processing level. But explanations provided at that level will narrow the search of the neurophysiologist, for they will tell him a great deal about the properties of the structures and processes he is seeking. We cannot claim to see in today's literature firm bridges between components of the central nervous system and components of the information-processing system. But bridges there must be, and we need not pause in expanding and improving our knowledge at the information-processing level while we wait for them to be built.

The practice of education—Until recently, psychology has shown a reluctance and an inability to address itself to the question of "what is learned." At a common sense level, we know that rote learning does not provide the same basis for lasting and transferable skills that is provided by "meaningful" learning. But we have largely been unable to go beyond com-

mon sense in characterizing what is rote and what is meaningful.

The theory of problem solving gives us a new basis for attacking the psychology of education and the learning process. It allows us to describe the information and programs that the skilled performer possesses, and to show how they permit him to perform successfully. But the greatest opportunities for bringing the theory to bear upon education will come as we move from a theory that explains the structure of human problem-solving programs to a theory that explains how these programs develop in the face of task requirements.

The experience of other fields of knowledge teaches us that in practical application of basic science unsuspected phenomena are discovered that can be carried back to the laboratory; new questions are raised that become topics for basic research. Both psychology and education stand to benefit in major ways if we make an earnest effort over the next decade to draw out the practical lessons from our understanding of human information processes.

There is beauty in the superficial complexity of nature. But there is deeper beauty in the simplicity of underlying process that accounts for the external complexity. There is beauty in the intricacy of human thinking when an intelligent person is confronted with a difficult problem. But there is a deeper beauty in the basic information processes and their organization into simple schemes of heuristic search that make that intricate human thinking possible.

Mental Health News Digests

Annual Meeting of the American Psychiatric Association

Several thousand psychiatrists and other mental health workers assembled in Washington, D.C. on May 3–7, 1971 for the 124th Annual Meeting of the American Psychiatric Association.

The Presidential Address given by Dr. Robert S. Garber urged the nation's psychiatrists to help build a better society and a more satisfying quality of life in America by attending to the "proper business of psychiatry." He asserted that the "centers of opinion" of the APA had held fast in maintaining that the public positions stated by the Association should emanate from the specialized knowledge of the profession and clearly identify the mental health components of the issues involved: ". . . let us maintain our integrity as a professional association. Let us get on with our search for the evidence that will support a major contribution from psychiatry to the resolution of the disaster-threatening problems of our time. But let us not forsake a critical scientific judgement on the validity of evidence that we must muster lest our pronouncements appear silly and ridiculous . . . And let us always sustain a style that is appropriate to our status as a medical specialty and a behavioral science." In defining issues in "the proper business of psychiatry," Dr. Garber addressed himself to the advancement and growth of community mental health centers throughout the country, the continuation of national subsidies for the training of psychiatrists, and the inclusion of adequate mental health benefits in the national health insurance scheme. Dr. Garber will be succeeded as President of the APA by Dr. Ewald Busse.

At the Convocation of Fellows, the APA's Awards for 1971 were announced. Dr. Dana L. Farnsworth of Harvard University received the Distinguished Service Award, which was established in 1964 to honor members whose distinguished careers have ennobled the profession of psychiatry. Dr. Farnsworth was honored for his work in advancing the physical and mental health of the American college student and for creation of a model for the delivery of student health services worthy of emulation throughout the United States.

The Lester N. Hofheimer Prize for Research was given jointly to Dr. Joseph J. Shildkraut of Harvard Medical School and Drs. William E. Bunney, Frederick K. Goodwin, and Dennis L. Murphy of the National Institute of Mental Health for their work on the pathophysiology of the affective disorders.

The Agnes Purcell McGavin Award, to honor those who have made outstanding contributions to the prevention of emotional disorders in children, went to Dr. Marion E. Kenworthy of New York City. The citation read, in part, "For more than 50 years this great lady physician, psychiatrist and psychoanalyst has been the indomitable champion of children in trouble—in trouble with their families, with society, and themselves."

Edward M. Brecher and his wife, Ruth E. Brecher (in memoriam) received the Robert T. Morse Writers Award which honors popular writers who have made major contributions to the public understanding of psychiatry over an extended period of time.

The Essay Prize on Aggression and Alternatives to Violence, which was established in 1970, was awarded

jointly to three authors: Dr. George E. Gardner of the Judge Baker Guidance Center for his essay, "Aggression and Violence—The Enemies of Precision Learning in Children"; Dr. William Barry Gault of the Massachusetts Mental Health Center for his essay, "Some Remarks on Slaughter"; and Dr. Roderic Gorney of the University of California at Los Angeles for his essay on "Interpersonal Intensity Competition, and Synergy: Determinants of Achievement, Aggression, and Mental Illness."

Nation's First Anti-Peonage Bill

The first "anti-peonage" legislation in this country has been passed by Indiana in order to compensate patients in mental hospitals for tasks performed just as if they were outside employees. Traditionally mental hospital patients have not been paid for work done at the hospital. Although it may be therapeutic, it has been found that the source of free labor often hinders a patient's opportunity for release since the hospital may be reluctant to discharge a good worker. The new bill also provides for therapeutic safeguards; legal rights, hearings and remedies for patients; authorization for the establishment of industrial work programs and authorization for the Department of Mental Health to enter into control arrangements with not-for-profit organizations. One such corporation has already been formed by the Mental Health Association in Indiana, called Associated Patients Services. This organization has started a pilot industrial program at the State hospital in New Castle, Indiana. For further information, write to Charles A. Weaver, Director of Governmental Relations, 1433 N. Meridian, Indianapolis, Ind. 46202.

NCCD Policy Statement on Crimes Without Victims

More than one half of all arrests are for "crimes without victims." In a policy statement, the National Council on Crime and Delinquency declared that laws creating "crimes without victims" should be removed from the criminal code. It explained that these laws are based not on harm done to others but on legislatively declared moral standards that condemn behavior in which there is no victim or in which the only one hurt is the participant. Common examples of such "crimes" are drunkenness, drug addiction, homosexuality, vagrancy, gambling, and prostitution, and, among children, truancy and running away from home—acts which are not crimes if committed by an adult. None of them is criminal in any real sense.

The use of criminal penalties has been proven ineffective in controlling these acts. Punishment of those who are apprehended under these laws carries no likelihood of producing any change in their behavior. They become embittered and often criminalized. The laws are disregarded. Widespread indifference to these laws in particular diminishes respect for the law in general.

The Council further stated that the prosecution of such individuals imposes on the criminal justice system an enormous burden of time and money. It was suggested that for many of these persons the appropriate measures required are the voluntary services offered by a medical or social agency. (*Crime and Delinquency*, 17(2), 1971).

Sixth International Congress on Suicide Prevention

The Sixth International Congress on Suicide Prevention is scheduled to meet in Mexico City in December

1971. The Congress is sponsored by the International Association for Suicide Prevention. The session themes will be drugs and suicide, psychoanalysis and suicide, and suicide in different cultures. For information, write to Miss Beatrice Pinal, Administrative Secretary, Sixth International Congress for Suicide Prevention, Apartado Postal 35–541, Mexico 10, D.F.

Conference on Sexual Abuse of Children

The first conference of its kind was held in Minneapolis in January 1971 on the subject of sexual abuse of children. Its main objectives were to examine the problem and to seek ways of protecting the victims of this type of abuse. The conference pointed out the imperative need for the State and communities to provide protective services for the child who becomes a victim. It also called for the early identification and treatment of neglect and abuse in order to reduce the possibilities of sexual exploitation of children.

A special panel presented several points as to how the communities could secure more adequate protection for these children. Among these points were: the use of juvenile or family courts instead of criminal courts (a less traumatic process for the child); the use of police investigators trained in interviewing children; psychological or psychiatric diagnosis and treatment to help reduce emotional trauma of child victims; and the involvement of child protective services working with the child and family as soon as possible after a report of sexual abuse. The conference was sponsored by four Minnesota organizations and the American Humane Association. For further information, write to Dr. Vincent DeFrancis, Director, Children's Division, American Humane Association, P.O. Box 1266, Denver, Colo. 80201.

U.N. Treaty on Control of Psychotrop Drugs

On February 21, 1971, in Vienn 60 nations signed a treaty that woul place psychotropic drugs under stri international control. The pact, calle the Convention of Psychotropic Sub stances, was the final act of the Unite Nations Conference for the Adoptio of a Protocol on Psychotropic Sub stances.

The Convention agreed that if an Party or the World Health Organiza tion has information relating to substance not yet under internationa control which has the capacity to pro duce a state of dependence and dete mine its potential seriousness an abuse and recommend control mea ures. The Convention also require proper licenses for the manufacture trade and distribution of such sub stances; medical prescriptions for cer tain drugs; the establishment of a spe cial administration within each of th cooperating countries to maintain th provisions of the Convention; and th submission of an annual report fro each of the Parties regarding th working of the Convention in thei territories. The Parties will also tak practical measures for the preventio of abuse of psychotropic substance and for the early identification, treat ment, education, after-care, rehabilita tion and social reintegration of th persons involved. Any action contrar to a law or regulation adopted by th Convention will be treated with ade quate punishment, especially impri onment or another penalty of depriva tion of liberty. The Parties may pro vide, however, that an abuser undergo treatment or after-care in addition to or instead of the punishment. Thes provisions are, of course, subject to the individual constitutions of th

member Parties. The treaty is expected to be ratified and in force by the end of 1971.

New Organizations

The National Research Council has established a *Human Resources Board*. The group will make a broad survey of national education and manpower problems, including an evaluation of social and economic returns on higher education and an analysis of the vast education and manpower data-collection systems. The Board expects to give early consideration to questions of higher education and problems of the white-collar worker. The Board will also stimulate studies by other groups. For information write to the Office of Information, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

A recently founded organization invites behavioral scientists and scholars to join together in promoting research on tensions, conflicts, and violence in an effort to promote peace and mutual understanding among nations. The first issue of their journal, *The International Journal of Group Tensions*, was published in March 1971. For information contact the journal editor and group founder, Dr. Benjamin B. Wolman, Professor of Psychology, Long Island University, 385 Flatbush Ave. ext., Brooklyn, N.Y. 11201.

At the State University of New York in Buffalo, a new *Center for the Psychological Study of the Arts* has been founded. Described as the first of its kind, the center will concern itself with the social and moral effects of the arts, particularly literature, as they incorporate and use psychological processes. For information, contact Norman N. Holland, Ph.D., Center for the Psychological Study of the Arts, State University of New York, Buffalo, N.Y.

Poetry Therapy

Today besides the various art therapies relating to the dance, music, drama, and painting in the treatment of emotional disorders there is the use of poetry therapy. Poetry has been found to have rewarding therapeutic values in the treatment of a wide range of disorders from disturbed adolescents to schizophrenics.

The Association for Poetry Therapy is an organization for the promotion of poetry therapy. The APT promotes the establishment and development of training programs and standards of accreditation in poetry therapy. It encourages research, publications, and workshops in poetry therapy throughout the Nation. The address of the Association for Poetry Therapy is 799 Broadway, Suite 629, New York, N.Y. 10003.

Humane Approach in Detoxification

The Alcoholic Detoxification Center of the District of Columbia is the only one of its kind. The Center uses what it terms a "humane approach" in the treatment of alcoholics that has proved to be more effective than the normal drunk tank. In 1966 a D.C. Court decision stated that alcoholism was an illness and that an alcoholic could be returned home, taken to a health center, or to the detoxification center instead of being placed in jail. In 1967 the D.C. Center was opened.

The Center handles over 13,000 patients a year, both voluntary and police-referred admissions. Each patient is initially given a medical screening. If there are no health problems, he is then put to bed until sober. He is then given nutritious food (one of the main things stressed in the program)

and counselled on nutrition. The Center also provides a referral service to other rehabilitative facilities if so desired by the patient. Every evening there is a meeting of the Alcoholics Anonymous on a volunteer basis. The maximum time a patient can stay in the treatment center is 72 hours. The approach has been such a success that the D.C. mental health administration is going to build a second detoxification center on the D.C. General Hospital grounds. The current center is located at 619 N Street, N.W., Washington, D.C.

Juvenile Delinquency Report

The *Annual Report of Federal Activities in Juvenile Delinquency, Youth Development, and Related Fields* was prepared by the Youth Development and Delinquency Prevention Administration of the Department of Health, Education and Welfare and sent to Congress by President Nixon in March 1971. The report claimed that the existing programs in this area were spasmodic, incoherent and ineffective and called for a new approach to the problems.

A new national strategy is being developed to deal with the interlocking problems that pose the greatest challenges: poverty, discrimination, and the cities. The prevention effort will be given priority along with the development of community-based treatment programs outside the juvenile justice system. For further information, write to the Youth Development and Delinquency Prevention Administration, Information Office, Room 2030, HEW-South Bldg., Washington, D.C. 20201.

World-wide Psychopharmacologist Directory

The National Institute of Mental Health Psychopharmacology Research Branch is planning to publish a reference source on investigators and projects in the field of psychopharmacology. Names of investigators will be listed alphabetically and a key word index section of the directory will enable all research administrators to make a quick world-wide check for psychopharmacological work in progress. The key word section will permit a user of the reference volume to search projects by investigator, drug, type of drug action, disease, type of patient, or mode of drug action and by a variety of other routes to the design information. For further information contact Dr. Alice Leeds, Chief, International Reference Center for Information on Psychotropic Drugs, NIMH, 5600 Fishers Lane, Rockville, Md. 20852.

International Research Support

It has been announced by the Office of the Special Assistant to the Director for International Activities, National Institute of Mental Health, that some funds may be made available for international research activities in Behavioral and Social Sciences. NIMH priority issues are most likely to be supported and projects should be such that they cannot easily be carried out in the United States. The U.S. Government holds access to foreign currencies for a few countries so that a few research projects in those countries might be funded most easily. The countries are India, Pakistan, Poland, Yugoslavia, and the UAR. For more information, write to Dr. E. Fuller Torrey, National Institute of Mental Health, 5600 Fishers Lane, Rockville, Md. 20852.

recent nimh publications

Single copies of these publications may be obtained from the Office of Communications, National Institute of Mental Health (Publications Issuance Unit, Room 1B64, Parklawn Building, 5600 Fishers Lane, Rockville, Md. 20852). A complete list of all publications available from the NIMH may also be obtained from the Office of Communications. If a price is given, the publication may be ordered in quantity from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Enclose a check or money order payable to the Superintendent of Documents.

Schizophrenia Bulletin No 3. This 80-page book is the third experimental issue of the *Schizophrenia Bulletin,* prepared jointly by the Center for Studies of Schizophrenia and the National Clearinghouse for Mental Health Information of NIMH. Among the many topics covered in this issue are articles on psychosocial treatment of schizophrenia, the use of nicotinic acid, evoked response techniques, NIMH activities in schizophrenia, and others. 70¢.

Consultation Research in Mental Health and Related Fields. This 55-page monograph by Fortune V. Mannino and Milton F. Shore of the Mental Health Study Center at NIMH presents a critical review of the literature on the use of research and evaluation in consultation. It places the material into major areas of study for review, summarizes the observations, and indicates areas for future research. Public Health Service Publication No. 2122. 35¢

Volatile Substances: Some Questions and Answers. This pamphlet is another in the series of educational flyers produced by the National Clearinghouse for Drug Abuse Information on drug abuse. It describes the various chemicals that are abused by young children and adolescents and the dangerous effects of these substances. Public Health Service Publication No. 2150. 10¢

Portraits of Suicide. This 30-page monograph by Harriet Wadeson, Psychiatric Art Therapist at NIMH, presents a study of suicidal patients through the use of Art Therapy. Often patients express their feelings freely through art and either depict previous or present suicidal feelings. Representative examples are given.

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